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ORIGINAL ARTICLES.

CALOMEL AS A DIURETIC.

Read in the Section of Practice of Medicine, Materia Medica and Physiology at the Forty first Annual Meeting of the American Medical Association, at Nashville, Tenn., June, 1890.

BY GEO. A. FACKLER, M.D.,

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS AT CINCINNATI WOMAN'S MEDICAL COLLEGE.

The purpose of this paper is to briefly present to the notice of the Section a subject which may be of interest to the general practitioner. Its purpose is to call attention to a remedy for the relief of a condition which is frequently a source of annoyance to the medical adviser. Although they do not form the larger portion of cases, still, every one has his fair quota of diseases of the heart to attend, and no complication of these affections is as unsatisfactory to treat as the œdema. Hence, any contribution to the literature of this subject, it seems to me at least, should not be allowed to pass unnoticed. Such contributions have appeared in our journals during the past three or four years and, hence, it may be profitable to bestow more than a passing glance at the observations of the original investigators of the action of calomel as a diuretic.

In 1884, Dr. Ernst Jendrássik, assistant at the clinic of Professor Wagner, in Budapest, had under treatment a severe case of dropsy, due to disturbance of circulation. With the consent of Wagner, and under the supposition that the affection might be of a syphilitic nature, he ordered inunctions of unguent. cinereum. Subsequently, in order to accelerate the action of this remedy, he administered to the patient small doses of calomel in combination with jalap. Within two days of the adoption of the latter course of treatment, the quantity of urine voided was increased to such a degree as to cause a disappearance of the dropsy within a few days. A few weeks thereafter the dropsy returned, but yielded as readily to the same treatment. Further investigation convinced Jendrássik that this action could be ascribed solely to the calomel. A report of his observations was published toward the end of 1885 in a Hungarian journal, but seems to have attracted no special attention until a more extensive review of his experiments appeared in the *Arch. f. Klin. Med.* in 1886, and a confirmation of his statements by Stiller in the *Wiener Med. Wochenschrift* of the same year. "Although the diuretic action of calomel as an adjuvant to others had been observed by some of the older authors, yet it was considered very inferior to those which our experience has proven to be almost valueless, and nowhere are we able to find that stress laid upon its effectiveness such as the experiments of Jendrássik and others demonstrates it possesses. In modern text books its diuretic action is entirely ignored, and only on account of its purgative properties is it recommended in dropsy. The results obtained by those who have made careful and numerous observations with calomel have created a great amount of surprise, especially since it is an agent which formerly had been so extensively employed. Although within the past five years it has again come into more general use, even as a purgative in dropsy, and yet its *par excellence*, diuretic action, remains unnoticed.

"After a perusal of the older text-books, nothing seems less difficult than to remove a dropsical fluid from the body, since the remedies known as diuretics are almost inumerable. But as is the rule in therapy, the number of remedies recommended for the relief of a certain condition is in inverse proportion to the number of good results obtained therefrom. The larger portion of this class has been eliminated from general use, and the remainder, digitalis excepted, are simply employed for want of better."

As stated above, Jendrássik's discovery was an accident. It may be interesting, then, to briefly review his subsequent experiments, the brilliant results of which led him to publish his paper upon the subject. In it he describes at great length seven cases observed in Wagner's clinic. All of the patients suffered with distinct cardiac lesions, and in all cases other diuretics had been previously employed without avail. One factor, alone, detracts from the value of these observations, and that is the fact that he administered calomel in combination with jalap.

He does not fail, however, to discuss the question as to which of the two the diuretic action should be ascribed to.

He attempted to obtain the same results after

the omission of calomel, but quickly returned to the combination when he found the diuretic action ceased and the condition of the patient became aggravated. In the first case the inhibition of the calomel-jalap powders produced profuse diuresis within three days, About four weeks thereafter jalap alone was given, but no increase in the amount of urine was noted. Two days use of the calomel-jalap powder, however, brought on a diuresis that speedily doubled the amount of urine voided.

In twenty-four experiments upon six different patients the amount of urine was increased in twenty-three. As a peculiar feature it was observed that the polyuria began two or four days after the beginning of the treatment. The increase is rapid. The maximum discharge in the majority of cases occurred on the second day of the polyuria. From that period the amount gradually decreased until within five days to two weeks the normal standard was reached.

The degree of the diuresis depended upon two factors: the size of the dose administered and the amount of the existing dropsy. Jendrássik found that as a rule 0.20 or grs. iij, given three times a day, produced the desired effect. This may vary somewhat, depending upon the facility with which the remedy is absorbed.

As is well known, calomel as such, is insoluble, and only as an albumate can it be absorbed. The process of this chemical combination differs in different individuals and under different circumstances. It was noticed that the diuretic effect would only take place when evidences of its absorption became manifest, *i. e.*, metallic taste, increased salivation and stomatitis.

It is important to consider the interval that elapses between the beginning of treatment and the inception of the diuresis. Jendrássik, at first, thought this due to insufficient dosage, but subsequent experiments convinced him that it was useless to increase the dose or continue the calomel until the diuretic effect became evident. Its administration for one or two days will produce polyuria, after a proper lapse of time, as effectually as if given during the intervening days. Again, calomel given during the stage of diuresis did not prolong it. In the majority of cases it was observed that if the dose was of the proper size, the diuresis continued until the œdema had entirely vanished.

Jendrássik found it difficult to explain the action of calomel as a diuretic. In cardiac lesion, during the stage of depraved compensation, it has been only possible, with the agents at our command, to cause increased diuresis with such agents as will invigorate the heart's action. Upon this property depends the action of digitalis and caffein. Under no circumstances will these remedies yield such pronounced beneficial results as calomel. Judging from our experience with cardiac stimulants, what an enormous increase in the heart's force would be demanded in order to cause such an increase in the urine voided as was obtained by Jendrássik, *i. e.*, an increase from 7-800 ccm. one day, to five litres upon the next, and eight or nine litres on the following.

Indirectly the calomel exerts a beneficial influence upon the heart, in that it removes the general œdema and causes improvement in the general condition. It is found that in three cases sleep is restored, the appetite improves, and in consequence thereof other cardiac compensation is, to a certain degree, restored.

Jendrássik supposed, at first, that calomel acts upon the kidneys, stimulating them to increased secretion, in consequence of which there is an increased absorption of the dropsical fluid. Not being able to produce polyuria by calomel in the healthy individual, he discarded this theory. He then supposed its effect to a property of absorption on the part of the blood, which the remedy might produce.

Rosenheim experimented not only with calomel, but other preparations of mercury, and extended his observations to liver and kidney affections. He found calomel to be the most reliable, and praised it as "indicative, especially in dropsies due to heart disease, with or without complications on part of the kidneys." As an objection he urges its transitory effect, and the detriment which mercurilization may cause in the general organism. Meyjes, after observations in fifteen cases, recommends calomel as a powerful adjuvant to digitalis and as a great contribution to the therapy of disturbances of circulation. He found it useless in renal dropsies. In like manner Paul Terray and E. Biro substantiate the statements as to the eminently diuretic action of calomel in cardiac lesions.

All observers, with the exception of the latter, found it of value in some cases of cirrhosis of the liver. Rosenheim advanced as a theory that the point of attack of the remedy may be sought for in the œdematous tissues. According to his views, the mercury, which he detected in the exudations, caused a contraction of the tissues, and a consequent expressing of the fluids into the circulation.

Stintznig undertook a series of experiments to find a satisfactory explanation of the diuretic action of calomel. He treated in all twenty-seven patients, twenty-one with, and six without dropsy. In thirteen of these former, complete success was obtained, and in eight only partial or none. Eighteen of his cases suffered with heart lesions, and in three the dropsy was due to cirrhosis of the liver.

No one has made more valuable and exact observations than Stintznig upon his cases. He presented a voluminous report of details and re-

sults in each case. They may be summed up as follows:

1. Calomel is a diuretic which acts more energetically than any other known diuretic. The diuretic properties are manifested to a lighter degree in the normal state, and to a very pronounced degree in certain forms of dropsy.

2. Its diuretic action is most marked in dropsies due to cardiac lesions, whether on part of the valves or muscular tissue. It will only fail partly, or entirely, in which ruptured compensation has attained an unusual degree, in which case, however, no other remedy is effectual. Other forms of dropsy, especially that of renal origin, are less amenable to treatment with calomel.

3. A certain proportion of its good effects may be ascribed to the occasional diarrhœa, but even when calomel is given with opium to check the diarrhœa, polyuria is established.

4. Its beneficial effect upon the general condition is marked.

5. The undesirable complications, as salivation, stomatitis, diarrhœa, etc., may be counteracted by the proper prophylactic and remedial agents.

6. The appropriate dose is that recommended by Dr. Jendrássik, about 0.2, but given alone or with opium.

7. The beginning of increased urination occurs on the second to fourth day; rarely delayed until the fifth. Polyuria continues for at least three, generally four or five, and occasionally as long as twelve days.

Stintznig excludes any direct action of the remedy upon the heart or blood vessels. Never has he observed an improvement in tone or frequency of the pulse, until after subsidence of the œdema. Thirst was never marked, hence the diuresis cannot be ascribed to copious administration of water. He also excludes Rosenheim's theory. But two remain: That of Jendrássik and Stiller, who believe that the effect is due to absorption on part of the blood of the exuded fluids, or that suggested by Furbinger, that on part of the blood there takes place stimulation of the epithelium of the kidney. In favor of the first we may suppose the formation in the blood of a body possessing hygroscopic properties. Against the latter it may be urged that, according to most observers, no diuretic action takes place in non-dropsical cases. Yet Stintznig claims, that since he did, by means of small doses of calomel, excite diuresis in the latter cases, he was inclined to adopt Furbinger's theory.

I would here take the opportunity of first presenting a case, which had been under my observation for some time, and which illustrates the foregoing remarks:

Case 1.—Without entering into the previous history of the case, except to state that no specific history could be obtained, I will describe the patient's condition as it was presented to me on February 26, 1889. There existed mitral insufficiency, with hypertrophy of the left and dilatation of the right ventricle. Liver enlarged, considerable ascites and extensive œdema of the lower extremities. Pulse not very rapid, but bounding. Complained of dyspnœa.

Patient was at first placed upon infus. digitalis, but the only improvement after five days treatment was in respect to respiration and sleep. Citrate of caffein was substituted for digitalis, and although this caused a slight increase of the amount of urine voided, the dyspnœa became more troublesome, so that we returned to digitalis. Thus various remedies, but as a rule digitalis, were given for about two weeks, when I determined to try calomel.

March 16, three doses of calomel, 4 gr. each, were administered. This was followed by copious alviul discharge and relief of dyspnœa. No change was observed in the urine, of which patient passed less than one quart in twenty-four hours.

March 17. Again three doses of calomel were administered, but combined with morphia in order to prevent inordinate action on part of the intestines. This was followed by two alvine disdischarges. No change in urine. The same procedure was adopted March 18. No calomel given on the following day.

March 20. Suddenly, about 7 P.M., profuse diuresis began, so that within twenty-four hours patient passed 4½ quarts of water. Its specific gravity fell from 1,019 to 1,007. Polyuria continued until March 25, when it was found that the œdema had almost entirely disappeared; no dyspnœa; general condition markedly improved. Salivation was marked, but easily controlled, as were also symptoms of stomatitis after cessation of treatment.

Patient returned April 15th with similar symptoms, but to a less degree of severity than when first seen. The calomel treatment was again instituted and acted just as powerfully as before. But one difference was noticed, and that was that the polyuria began on the fifth day and lasted one week. Patient remained under observation until May 6, when he left the city and has not been heard of since.

In this case calomel was so administered as to determine whether any diuretic action was possessed by it. It was not combined with jalap, as by Jendrássik, since jalap in all probability, by increasing peristalsis, accelerates the elimination of calomel. The latter can act as a diuretic only if absorbed in the shape of an albuminate; hence, it should be our object to retain it as long as possible, in order to effect this change. With this object in view it was, according to instructions of Stintznig and others, combined with morphia.

This case, then, would present strong evidence toward the value of calomel as a diuretic.

Case 2.—A. M., laborer, came under observation Oct. 2, 1889. Six months previously had suffered, for a period of one month, with dyspnœa and œdema of lower extremities. These symptoms returned August 15, 1889, and gradually increased in severity. Present condition: Extensive anasarca of lower extremities, enlargement of right ventricle, systolic murmur at apex, enlargement of liver, some abdominal ascites, traces of albumen.

Oct. 2. Urine voided, two pints.

Oct. 3. Urine voided, one and one-half pint; three doses of calomel, āā gr. iij, with morphia.

Oct. 4. Urine voided, two pints, three doses of calomel, āā gr. iij, with morphia.

Oct. 5. Urine voided, five pints; three doses of calomel, āā gr. iij, with morphia.

Oct. 6. Urine voided, ten pints; three doses of calomel, āā gr. iij, with morphia.

Oct. 7. Urine voided, nine pints; no calomel.

Oct. 8. Urine voided, ten pints; no calomel.

Oct. 10. Urine voided, six pints; no calomel.

Oct. 11. Urine voided, eight pints; one dose of calomel, gr. iv.

Oct. 12. Urine voided, four pints; no calomel.

Oct. 13. Urine voided, five pints.

Oct. 14. Urine voided, six pints.

Oct. 15. Urine voided, four pints.

After this date, gradual approach to normal amount. During the treatment the œdema had vanished, specific gravity of urine falling from 1,020 to 1,008 at times. Disappearance of albumen; all symptoms improved. Patient, as a rule, had two fecal evacuations a day, and on but one day were they increased in number to 5. Slight salivation and stomatitis.

Case 3.—A. B., lady school-teacher, 45 years of age, came under observation March 15, 1890. Symptoms: Dyspnœa, slight œdema of lower extremities and genitalia, very slight increase in cardiac area of dulness toward left side, rapid heart's action, systolic murmur, scarcely appreciable ascites, no albumen.

March 15. Amount of urine, less than one pint; specific gravity, 1,022; three doses calomel, āā gr. iij, with morphia.

March 16. Amount of urine, less than one pint; specific gravity, 1,021; three doses calomel, āā gr. iij, with morphia.

March 17. Amount of urine, one pint; specific gravity, 1,021; three doses calomel, āā gr. iij, with morphia.

March 18. Amount of urine, one and three-quarters pints; specific gravity, 1,016; three doses calomel, āā gr. iij, with morphia.

March 19. No calomel, severe stomatitis; amount of urine, two pints; specific gravity, 1,015.

March 20. Amount of urine, one and a half pints; specific gravity, 1,014. No calomel.

March 21. Amount of urine, two and a half pints; specific gravity, 1,010.

March 22. Amount of urine, four pints; specific gravity, 1,010.

March 23. Amount of urine, five pints; specific gravity, 1,008.

March 24. Amount of urine, eight pints; specific gravity, 1,006.

After this date daily amount grew gradually smaller, but never below the normal. Patient discharged April 16. No return of œdema. The appearance of diuresis in this case was relatively late, viz., eighth day.

Case 4.—L. O., man, 29 years of age. Case seen in consultation. Slight cyanosis, pulse 104, small and irregular; perceptible venous pulsation in cervical region, systolic murmur, great cardiac hypertrophy, extensive ascites, liver enlarged, no albumen, anasarca. Saw patient April 2, 1890. Was passing about one pint of water per day; specific gravity, 1,025. Calomel administered for a period of four days made not the slightest impression upon the urinary secretions or œdema, and, therefore, no alleviation of symptoms. Besides this a halt was called to the treatment by the severe diarrhœa and stomatitis. Indications for digitalis and camphor appeared. Patient died May 8.

This case illustrates the fact that in the last stage of cardiac insufficiency the diuretic action of calomel can not be depended upon. In this case all remedies as digitalis, pilocarpin, caffein, baths, etc., had proven unavailing in the hands of the attending physician.

Before closing, it may be well to state that experiments have been and are being instituted as to the diuretic action possessed by other mercurial compounds. Thus far, testimony as to their value is rather conflicting, although some, among them Bièganski, claim that, administered hypodermically, mercurials, especially the bichloride, will act more promptly than calomel.

From the reports thus far presented, we may safely conclude that:

1. Calomel, and in all probability other mercurial compounds, possess diuretic properties.

2. If given in proper dose, the effect of calomel becomes evident in two to ten days. Continuance of the treatment during the diuresis will not alter or increase the effect.

3. Its action is most marked in dropsies due to heart disease. Its action in dropsies of hepatic origin is not to be relied upon. Pathological changes in the kidney prevent or abridge its action.

4. Small doses will prove of no avail.

5. The diuretic action may, in all probability, be ascribed to the irritating effect which the mercury, during its elimination, exercises upon the renal epithelium.

FURTHER OBSERVATIONS UPON FOOT-AND-MOUTH DISEASE IN ITS RELATION TO HUMAN SCARLATINA AS A PROPHYLACTIC.

Read in the Section of Diseases of Children at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

BY J. W. STICKLER, M.S., M.D.,
OF ORANGE, N. J.

On December 1, 1887, a paper upon the above subject was read in the presence of, and discussed by, the New York Academy of Medicine. Since that time I have obtained from Dr. M. K. Robinson, of Dover, England, additional statistics which he has secured for me at considerable personal inconvenience, and which are, I think, of sufficient interest, to quote in connection with what has already appeared in relation to the matter under consideration.

First, let me review enough of my former paper, to present clearly the subject as we are now to consider it.

During the early days of February, 1884, a remarkable outbreak of sore throat occurred in Dover, England, which was due to the drinking of milk obtained from cows affected with foot-and-mouth disease. During the week ending February 9, 205 persons were attacked with the disease. "The majority of persons who suffered during the Dover epidemic presented two prominent symptoms in common, viz., inflammatory sore throat and enlargement of the lymphatic glands," but the lesions produced varied considerably in different cases. The vesicular eruptions were followed either by a raw red, œdematous appearance of the mucous membrane, or white patches, and the ulcers which supervened, assumed in many instances a chronic character, with thick puckered edges, and were a long time in healing.

When the inflammation of the tonsils went on to suppuration, recovery was much slower than after common quinsy, and the enlarged cervical glands remained tender, red, and swollen, long after the throat symptoms had subsided, *resembling, in this respect, the sequelæ of scarlet fever.* (I am quoting now from Dr. Robinson's original paper on the Dover Epidemic). Erysipelas and purulent formations were concomitants, also, of the epidemic. "In some instances the feet of those who suffered, were swollen and painful, simulating rheumatism.

"A fatal termination resulted in the cases of two children, who had very bad throats and mouths, with the extension of the disease, in one case, to the respiratory tract, their deaths being, in the opinion of the medical attendant, due to the poisonous effects of the milk." "Two persons who labored under chronic kidney disease, were respectively attacked with sore throats and died on the same day; other people in the same houses suffering, also, from the 'epidemic sore throat.'" "A servant girl was attacked on February 4, with sore throat and pain in the limbs, complained on the 8th of great pain in the epigastric region, and dyspnœa. There was a purple-red patch on the left cheek, extending to the nose. At 3 P.M. on the 9th, she passed into a state of coma, and died at 4 P.M." "Mr. Wood says this was an obscure case, but thinks it possible that it was one of blood poisoning. Being in England, in 1886, to investigate this unusual epidemic of sore throat, and wishing, if possible, to learn what relation, if any, it bore to scarlatina, I went to Dover to consult with Dr. M. K. Robinson. He received me very kindly, and said he would go with me to the various homes where the disease had existed, that we might gain the desired information."

The following *facts* were elicited:

1. That members of eight different families who had previously had scarlet fever, escaped the "throat epidemic" while all the other members contracted the disease, all alike having partaken freely of milk infected with the contagium of "foot-and-mouth disease." The number of those who escaped was 23+. I say plus 23, because in the case of one family, we were told that the father, mother and servants escaped, the number of servants not being stated. Allowing the number of servants to be two, the whole number would be twenty-five.

2. That of 183 persons who had the "throat epidemic," sixteen had had scarlet fever.

3. That four of the sixteen persons who had had scarlet fever, had a *mild form* of the "throat epidemic."

4. That two of the affected individuals had scarlatina *when young*.

5. That *none* of the persons affected with the "throat epidemic," had contracted scarlet fever from natural, accidental exposure, between the time of having the "sore throat" and the date of my visit (1886).

At this point, and in close connection with what has just been stated, let me quote *in extenso* the paper recently received from Dr. Robinson, the one alluded to in the first few lines of this article. It is as follows:

Dear Dr. Stickler:—I have at last been able to complete the further inquiry which you asked me to make, and beg to furnish you with the information sought for, which you may consider more complete than my previous communication to you upon the subject. The following summary has been compiled from statistics containing all the information procurable, concerning the epidemic of 1884:

Number of cases of foot-and-mouth disease which came under observation during an epidemic of this disease, at Dover, Eng., in 1884	205
Number of persons attacked who had previously suffered from scarlet fever	23
Number of persons attacked, who had *not* previously suffered from scarlet fever	161

Number of persons who, having had scarlet fever and imbibed infected milk, *escaped* foot-and-mouth disease . . . . . 36[1]

Number of persons who had foot-and-mouth disease in 1884, since exposed to scarlet fever without contracting the disease 14

With regard to the prevalence of the disease in Great Britain, it does not appear to have been worthy of recognition in our official nomenclature of diseases, and it has escaped notice by the leading authors of our text-books on medicine. When my interest in this disease, as developed in the human subject, was aroused, I had to resort to veterinary practitioners and veterinary works, in order to obtain descriptions of the symptoms, and history of the malady. I am not surprised, therefore, that Sir James Paget should write to you, to the effect that he was not aware of the existence of the disease, when it fails to find a place in British nomenclature and teaching. It is now twenty years ago, when Medical Officer of Health for the Borough of Leeds, that a distinct epidemic of this disease came under my notice. It was confined chiefly to children who had partaken of milk from cows suffering from this disease, and the symptoms in the human subject were most characteristic. Since that time *limited* outbreaks have, from time to time come under my observation, which, although clear to my mind as to their nature and origin, were *limited in point of number of cases on each occasion.*

Then came the sudden and wide-spread diffusion of the disease in Dover, which, with considerable labor I was able to trace so clearly to its source, that I felt it my duty to bring the matter before the medical profession, and place on record, the facts then elicited.

When the history of this last mentioned epidemic obtained notoriety from its publication in the daily papers, I had many communications on the subject, from persons who had evidently sustained practical experience of the disease, but the nature of which had escaped recognition at the hands of medical practitioners. Thus, Captain Reid, of Backsford House, Ashford, says in a letter to me, "some few years ago whilst staying at a fashionable watering place, my children were poisoned from milk, which I ascertained for certain, was derived from a cow suffering from foot-and-mouth disease. I at once recognized the disease, because on a previous occasion five of my household had suffered from drinking the milk of a cow belonging to myself which was afflicted with the disease."

Another gentleman told me that being thirsty, he went into his cowshed and drank off a glass of milk just yielded from one of his cows, which he found afterwards was ill at the time, and subsequently pronounced by the veterinary surgeon, to be suffering from foot-and-mouth disease. This gentleman was attacked with bad mouth and throat.

Another gentleman said: "When my cows suffered from the disease, my man along with his wife and family, would persist in drinking the milk from the diseased animals, and they were all attacked with the malady. The Messrs. Crowhurets, veterinary surgeons, wrote me, saying that when attending upon animals suffering from foot-and-mouth disease, the attendants upon such animals had often complained of the same symptoms which were exhibited by the animals in question, etc.

The disease as it occurs in animals, has been variously described as eczema, epizoötic, apthous fever, epizoötic aphtha and murrain, and is characterized by fever and a vesicular eruption in the cleft of the hoofs, or in the mouth, with extension into the throat and nostrils. Shivering, and a ropy discharge from the nose, are often noticed at the onset of the attack. When the vesicles are ruptured, ulcers form, or red spots, bare of epithelium, appear with the characteristic soreness which ensues.

[1] This number includes persons other than families in which the disease broke out, but who obtained the same milk supply.

The incubation period varies, but animals have been known to suffer twenty-four hours after exposure to infection. Various complications occur, and erysipelas and pyæmia have been known to supervene.

The following characteristics were noticed in the human epidemic which occurred at Dover: Shivering, followed by headache and fever, pains in the limbs, thirst, parched lips and a vesicular eruption on the throat and mouth. A common accompaniment was enlarged cervical glands; many had enlarged tonsils, in some instances, proceeding to suppuration.

In the *Veterinary Review*, Vol. IV, p. 502, and Vol. V, p. 187, will be found some evidence furnished by Dr. Balfour and Mr. H. Watson, on the transmission of foot-and-mouth disease by milk to man, and in the same periodical (Vol. V, p. 81) Mr. Hislop records some instances of human beings taking the disease by inoculation. Parkes in his "Practical Hygiene," says: "There has been much discussion whether the milk from cows with foot-and-mouth disease causes affections of the mouth, etc., in human beings. There are some striking cases which seem sufficient to prove that diseases of the mouth, aphthous ulceration, general redness, diphtheritic-like coating, and swollen tongue occur. In the proceedings of the Royal Society for 1881, a new form of febrile disease is described by Dr. Evart, the propagating agent being milk from a dairy near Aberdeen.

Gamgee, the eminent veterinary surgeon, says that the disease is communicable to man, as the history of the various outbreaks of the disease undoubtedly prove. I have referred in detail to the above mentioned symptoms as observed by reliable narrators, because I am satisfied that many *ill-defined throat affections* are due to bovine sources.

During epizoötic epidemics, I have, again and again, noticed the concomitant prevalence of aphthous affections and diphtheritic-like appearances, described often under the heads of follicular stomatitis and follicular tonsillitis.

Dr. C. Fox described a peculiar epidemic, characterized by inflammation of the tonsils, extending into the pharynx, and sometimes to submaxillary and cervical glands, and accompanied by yellowish patches on the throat.

This outbreak occurred in October and November, 1875, in a parish which differed from its neighbors in this, that the inhabitants were supplied with water from a stream polluted at various parts of its course by the drainage of farm yards, the inference being, that the specific poison was derived from the infected excretions of cattle.

That some intimate relationship exists between scarlet fever and diphtheria, appears to be extremely probable, my own view being that diphtheria can be produced by the pabulum on which the scarlet fever poison exists, during the interval between its passage from one human subject to another. I have known instances where diphtheria has broken out at isolated spots in the country, when, after diligent search, no exposure to any previous case of diphtheria could be traced, but where I know that scarlet fever had previously occurred, and that those who suffered from diphtheria had been exposed to exhalations from scarlet fever infected excretions.

Again, it is the custom in many parts of England, to cart town refuse and garbage into the country, and there may be witnessed the disgusting spectacle of swine feeding upon the scavenger's motley collection, including as such heaps do, not only decaying vegetable and organic matter, but rags and poultices from hospitals and sick-rooms.

Many times has swine fever (which some maintain is allied to scarlet fever) broken out amongst pigs kept as above described, and I have also noticed that in the same locality, the *swine fever has been accompanied by foot-and-mouth disease amongst the cattle*, but what is far *more important, human beings that have consumed milk*

from the infected cattle, have suffered from *diphtheritic-like affections of the throat.* It is a *striking fact*, that in certain localities where *foot and-mouth disease* has prevailed, there also has there been a large development of *diphtheria* or its *congeners.*

The cases of foot-and-mouth disease officially reported in England, increased from 37,000 in 1882, to 461,000 in 1883, and following this enormous increase of the epizootic disease, there was a large increase in diphtheria. The number of deaths alone from this disease, in England and Wales during the first quarter of 1884, being 1,270, and the death-rate from the malady higher than that recorded in any quarter of the previous fourteen years. The above observations I have not published, but you are at liberty to make any use of them you think proper. Believe me,

Yours faithfully,
M. K. ROBINSON.

In immediate connection with this letter, and the statistical table already given, let me call your attention to the facts concerning an outbreak of foot-and-mouth disease in Bethersden, England, in 1884. They are as follows in tabulated form, namely :

No. of Cases.	Age.	Scarlet fever previously.	Scarlet fever since.	REMARKS BY DR. M. K. ROBINSON.
1	8	. .	0	Members of same family.
2	10	. .	0	
3	18	. .	0	Same family. Four other members who had previously had scarlet fever escaped epidemic of sore throat.
4	6	. .	0	
5	8	. .	0	
6	5	. .	0	Same family; 7 and 8, mild sore throat, probably modified by previous scarlet fever.
7	7	1	0	
8	9	1	0	Very slight case of scarlet fever last year.
9	3	. .	1	
10	8	. .	0	Same family.
11	2	. .	0	
12	1	. .	0	Same family. No. 13, mild case of scarlet fever. No doctor employed.
13	9	1	0	
14	7	. .	0	Same family. No. 16, mild case of scarlet fever.
15	11	. .	0	
16	9	1	0	Same family. Three other members of this family, who had previously had scarlet fever, escaped throat epidemic.
17	2	. .	0	
18	12	. .	0	
19	5	. .	0	
20	4	. .	0	Same family. Case 22, mild throat case.
21	2	. .	0	
22	22	1	0	
23	6	. .	0	
24	7	. .	0	
25	7	1	0	
26	8	. .	0	
27	6	. .	0	No. 28 said to have been mild; no doctor.
28	9	1	0	
29	9	1	0	No. 29, mild throat case.

We learn from this table,

1. That *two members* of one family who had *not* previously had *scarlet fever*, *developed* the foot-and-mouth disease, while *four other members* who had previously *had scarlet fever*, *escaped.*

2. That *three members* of another family who had not *previously had scarlet fever*, *contracted* foot-and-mouth disease, while the *three other* members who *had the scarlatina*, *escaped.*

3. That but one person developed scarlatina after having had foot-and-mouth disease, and that attack was very mild.

4. That persons who, having had scarlatina, contracted foot and-mouth disease, had the latter affection very mildly.

5. That these individuals developed the foot-and-mouth-disease, as a result of exposure to manure derived from cattle affected with aphthous fever.

As supplementary evidence in favor of the prophylactic power of foot-and-mouth disease against scarlatina, I will re-state the facts concerning three children whom I inoculated with the virus of foot-and-mouth disease.

Case 1.—M. M., about eight years of age ; had never had scarlet fever. On January 12, 1884, I injected under the skin of his arm, a small quantity of the virus taken from a cow, having a mild attack of foot-and-mouth disease. A short time thereafter, the cervical glands became enlarged and tender to the touch. There was no marked systemic disturbance, neither was there any sore mouth or throat. All signs of glandular enlargement and tenderness had disappeared in six or seven days. He was then taken to a house in which there was a boy sick with scarlet fever. The disease was in the desquamating stage, and the throat still sore. His parents being poor, the pillow upon which the patient lay, had not been exchanged for a clean one since the beginning of the sickness. This pillow was placed upon the face of the boy who had been inoculated, and held there some time. He was then made to inhale the breath of the patient, and afterward to remain sometime in the sick-room. The boy did not develop scarlatina after having been thus exposed, neither has he contracted the disease since, although there has been opportunity for infection.

Case 2.—B. B., aged four years ; had never had scarlet fever. On March 6, 1884, I inoculated her in the arm with a small quantity of foot-and-mouth virus. On March 13th the temperature rose to 103° F. Her mouth was sore without showing any vesicles, and she complained of a pricking sensation in her throat. She had slight headache, the appetite was impaired, and she was quite peevish. There was no eruption at any point of the body. By March 20 she was well. She was then taken to a house where I had a patient in the desquamating stage of scarlet fever. The patient was very sick at the time because of complications ; indeed, was so ill that I was somewhat doubtful about the issue. The same plan of exposure was adopted as in the first case, except that I could not get the inoculated child quite near enough to the patient to inhale her breath ; but the "pillow exposure," and the length of time she remained in the sick room, afforded a good opportunity for infection. She did not subsequently develop scarlet fever.

Case 3.—J. M., aged about ten years. Had never had scarlatina. I inoculated him just as I did the first two. He did not afterwards develop any systemic disturbance or local lesion. After a lapse of three years, with opportunity for infection, he tells me he has not had scarlatina.

These cases taken in connection with the others, suggest gratifying results should further inoculations be made.

In one of my note books I find this entry, namely :

Thursday, August 19, 1886, went with Dr. Robinson to Canterbury, England, where we saw the health inspector, who told us that in one family, the foot-and-mouth disease attacked *only* those members who had *not had scarlet fever*. We found four persons suffering from the epidemic sore throat who had had scarlet fever.

Without commenting now upon what has thus far been stated, I will describe somewhat briefly (quoting Professor Walley), foot-and-mouth disease as it affects animals.

Synonyms.—Murrain ; eczema epizoötica ; distemper ; epizoötic aphtha ; vesicula epizoötic ; aphthous fever.

Definition.—It is a vesicular eruptic or exanthematous affection, due to a specific ferment, and having its lesion localized in the skin and mucous membranes.

Characters.—Eczema Epizoötica is probably indigenous in the bovine tribe only, but there is no direct proof that it may not originate in the ovine species also. It readily attacks sheep, goats, swine and poultry ; it is easily transmitted to the human subject, and it has been described as existing in the horse, the dog, wild fowl, deer, wild boar, etc. Walley says little or nothing is known of the ferment of this disease. Dr. Klein, of London, says the disease is caused by a micrococcus which forms in artificial media, besides dumb-bells (diplococcus), beautiful chains (streptococcus). These differ in length according to the number of micrococci composing them, the short chains being a linear series of four, six, or eight micrococci, the longer ones, of more than eight up to thirty and more micrococci. The longer chains are always curved, and even convoluted.

In different outbreaks it localizes itself mainly in the feet, the udder, the mouth, the skin and mucous membranes respectively.

One attack does not give immunity from others; and not only may an individual animal suffer several times from it in the course of its life, but even twice or thrice in a season, *though in the great majority of cases each successive attack becomes milder in its character.* Dr. L. McLean, Government veterinary surgeon, says, "*In the bovine species one attack of foot-and-mouth disease does not give immunity from the disease ; but in the ovine species it does.*"

The channels by which nature endeavors to eliminate the poison, are the salivary and mammary glands, the mucous glands of the bronchial and intestinal mucous membranes, and the skin.

The effects of the poison on the skin are invariably well marked, *desquamation of the cuticle being extensive* ; but while this is a common characteristic of many zymotic diseases, it nevertheless points to the necessity of encouraging the elimination of the poison by this channel.

Period of Incubation.—Is, compared with other zymotic affections, short, viz., from twenty-four hours to three weeks. The average is from two or three, or five to six days.

Invasion.—Is, on the whole, rapid and pronounced, the manner of invasion depending upon the amount of poison received into the system, the conditions of the host, and the surrounding circumstances.

Duration.—Is variable, and is regulated by the intensity of the attack, and the care which is bestowed upon the patient. From ten to twenty-one days may be looked upon as the average period of duration where the disease runs a regular course, and is not succeeded by important sequelæ.

Fatality.—Depends largely upon the character of the outbreak ; in some seasons death in any animal is rare, while in others, great numbers succumb to the primary effects of the disease.

Propagation.—It is propagated by direct and mediate contagion, as the virus is both fixed and volatile, but it is only diffused through the medium of the atmosphere at comparatively short distances. As the saliva, the nasal, conjunctival, and intestinal mucus are highly charged with the virus, it is most readily spread by the conveyance of these secretions to healthy animals, by many direct and indirect means.

SYMPTOMS AND COURSE.

The symptoms must be divided into general, or constitutional, and local.

The premonitory constitutional symptoms are identical with those of other zymotic diseases. These are—isolation, usually very marked; arched back in cattle ; tucked up abdomen ; muscular twitchings or shiverings, more or less severe; erection of the hair, the skin being hot and dry; and stiffness of gait, which is most pronounced when the feet—and particularly so if three or the whole—are affected.

Bowels usually a little constipated; urine sometimes scanty, high-colored, and laden with solids, especially as the disease advances ; at other times it is profuse and limpid. There may or may not be mucous discharge from the eyes and nose, with increased lachrymal secretion from the former. In young animals, exposed to inclement weather, such discharge is very constant, and in the course of a few days, that from the eyes forms a yellow accretion at the inner canthus of the lids and down the sides of the face, a similar accretion being formed, by the nasal discharges, round the edges of the nostrils.

Under exposure, an irritable bronchitic cough is present, by localization of the lesions in the bronchial mucous membrane.

Temperature always elevated to the extent of

2° or 3° F.; the pulse and respiration may not be much disturbed. Appetite indifferent when invasion is rapid, and the fever high, or the stomach and bowels affected; in ordinary cases, a desire for food is evinced, even though the lesions in the mouth are extensive. In ruminants, rumination is performed naturally, unless the mouth is much affected.

In milch animals, interference with the lacteal secretion will be largely regulated by the localization or non-localization of the lesions in the udder.

As the disease advances, the phenomena above enumerated increase in intensity, and continue to do so until the climax—which may be calculated at from the third to the seventh day—is reached, after which they gradually subside.

In addition, vesicular and pustular eruptions may appear on the skin of different parts of the body; they are most often seen in the pig, and the primary may be succeeded by secondary, and even tertiary crops.

Jaundice is a very frequent concomitant. *Desquamation* of the cuticle is an *invariable accompaniment of convalescence*, the skin being covered with abundant bran-like scales of a yellow color; it is also extremely irritable, animals rubbing against prominent objects vigorously.

If the lesions are localized in the gastro-intestinal mucous membrane, colicky pains are induced.

The local lesions are, so far as the skin is concerned, usually seen in parts devoid of hair, or where it is delicate, as the feet, the mouth, the udder, and in some cases the vagina of the female, and the sheath of the male. In all animals, the earliest pedal sign is lameness—more or less sudden and severe—with uneasy movements of the limbs. In the course of a few hours, subsequently to the advent of the lameness, the vesicular eruptions characteristic of the disease appear. The pedal vesicles are bladder-like elevations, varying in size from a hazel-nut to a walnut. If allowed to remain undisturbed, the vesicles burst in from three to twelve hours, and discharge a limpid, colorless, or pale straw-colored fluid; the jagged edges of the lacerated epidermis become retracted, and slightly everted, and form an irregularly raised white boundary around the margin of the resulting sore. The cutaneous structure which is exposed by the eruption of the vesicle, is of an intensely scarlet color.

The advent of mouth lesions in cattle is marked by smacking of the lips, or rather the mouth; by dribbling of the saliva, and by partial or total inability to masticate. The mouth vesicles vary in size and character, according to the part of the buccal membrane in which they are located. The pad vesicles appear as flattened elevations of the epithelium, without areolæ around their bases. On the tongue, the vesicles are much larger than elsewhere. They vary in number from one to five, and are very resistant. They present much the same character as on the pad. Two or three may coalesce and form one very large vesicle. On the inside of the cheek, the reddened condition of the mucous membrane is more discernible, and the resistance of the vesicles considerably diminished.

On the lower lip vesication, in ordinary cases, is comparatively infrequent. The vesicles, when they appear, are much smaller. On the skin outside the lips, vesicles are rarely seen. More frequently secondary than primary, are small, and succeeded by pustules and scabs.

In the course of a few days, the epithelium will be so far restored as to form a perfect coating over the inflamed tissues. In the cow, vesicles usually appear a few hours after the premonitory signs of the disease, on the body, and around the apex of the teats, but they may be developed in any part of the udder. At first they are discrete, but frequently become confluent. They vary in size from a three-penny piece upwards. The period of vesication will vary from one to two, to about thirty-six hours, depending upon amount of friction and pressure to which they are exposed.

The exposed epidermis, after rupture of the vesicles, is intensely hyperæmic, but if the parts are undisturbed, it quickly becomes covered by inspissated pus, coagulated lymph, and epidermic cells—the hair, when present, assisting in forming a coherent brown-colored scab, which has usually irregular edges, and varies in thickness.

The substance of the tongue is usually much more flaccid than normal, *and if the papillæ are carefully examined, it will be found that, in the earlier stages of vesication, they are much congested, subsequently becoming atrophied and shrivelled. It sometimes happens that when the tongue is seized to explore the mouth, large patches of epidermis come away in the hand, as if the tongue had been boiled.* This occurs in the aphthous stage, when the vesicles have ruptured, and, the epidermis being removed, erosions appear. (Fleming.)

Thus far I have simply stated *facts*, such *facts* as should receive the most earnest attention of the profession. I make this statement without apology, because I am satisfied that when a disease failed to attack *every* member of *eight different* families who had previously had scarlet fever, and *attacked every other member who had not had* scarlet fever, there was some good reason for it; that reason apparently being, not coincidence, but the protective influence of the one disease against the other.

Further, not only was this true of eight families in Dover, England, but of two families in Bethersden, England.

Again, there were other individuals, who, having had scarlatina, escaped the throat epidemic, and, as already stated, when the "throat epidemic" occurred in those who had had scarlatina, it was mild in character, as far as could be learned,

and in the *one* instance in which scarlatina occurred after the epidemic sore throat, it was a very mild attack. Here again, there must be some reason for the mildness of one disease when appearing after the other in the same individual.

Thomas, in his article on scarlatina, says: "Soon, perhaps already on the second or third day, the *entire coating of the tongue with the superficial layers, exfoliates, either at once or in successive sections, in a manner found in no other disease.* Now *here* is a disease (foot-and-mouth disease) in which this *very thing does occur*, as already stated on the authority of Fleming. In *both*, the *papillæ of the tongue* are *swollen* and *prominent.* In *both* there is *abundant desquamation* of the cuticle. Sometimes in scarlatina ulcers occur upon the tongue, cheeks and gums, as in foot-and-mouth disease. Foot-and-mouth disease frequently attacks cattle more than once; sheep, on the other hand, do not so commonly have a second attack." In the case of scarlatina, Thomas (Ziemssen, Vol. ii, page 186) says: "As a general fact, it cannot be disputed that scarlatina belongs to that class of diseases which occur but once; nevertheless, exceptions appear to be of comparatively frequent occurrence." He then says he collected, in the literature to which he had access, *about two hundred cases of a second infection*, besides a few reports of a *third* and *fourth infection in the same individual.* Murchison observed relapses of scarlatina in two sisters. Trojanowsky says "in two of his cases of secondary scarlatina, both parents had also the disease twice, and in a third case, the father had been affected twice." Richardson states that he has experienced scarlatina *in his own person three* times. Sir Robert Gillespie tells of a young lady who had scarlatina *three* times, the diagnosis of which was unequivocal. (Ziemssen, Vol. ii, p. 191.) Henrici, during the epidemic of scarlatina in Kiel, from 1797 to 1798, attended a woman who was then undergoing her *seventeenth* attack of scarlatina with all its symptoms. (Ziemssen, Vol. ii, p. 192.) The latter statement may be exaggerated. Dr. Edward J. Ill, of Newark, N. J., writes me as follows concerning some of his own patients: "One of my patients, 6 years old, had an attack of scarlatina in 1881. In 1883 she had another attack. In January, 1887, a *third* attack. In 1888 she had a *fourth* attack. Desquamation followed in each instance."

Another case, "J. G., æt. 12 years, had scarlatina in 1888—had a prior attack in 1881."

The tendency to suppuration of the tonsils, and the continued enlargement of the cervical glands, in persons who had the foot-and-mouth disease, suggested a resemblance of the two diseases: scarlatina and foot-and-mouth disease.

A consideration of the above, inclines one to the opinion that the two diseases under consideration, may be more closely allied to one another than has heretofore been supposed to be true, and that it is probable that an individual who has had one disease, either will not contract the other on exposure, or will have it in a very modified form, if he contract it. Dr. Robinson, in a personal letter to me, says: "As to the prophylactic power of one disease against the other, my own view is, that if persons who have had one disease, and are exposed to the other, suffer from the alternate one, they do so in a mild form. If there is some intimate relation between the two maladies, it is fair, I think, to assume that persons who have suffered from one form, are less susceptible to the other. I do not think I mentioned in my former communications, *as evidence of the relation of the two diseases*, that in the County of Norfolk, during a period of great prevalence of foot-and-mouth disease amongst cattle in 1883, *there was a great increase of scarlet fever*, and especially a *scarlatinal sort of sore throat.* This fact was stated in the House of Commons, during a discussion of the Contagious Diseases (Animals) Bill, on March 18, 1884, and reported in the daily papers the following day." Professor Law said, in discussing my former paper, "Epizoötic foot-and-mouth disease had at times attacked *nearly all the cattle and the people of Great Britain*, and considering the fact that the disease was so prevalent, there should be less scarlet fever in Great Britain than in America, where the foot-and-mouth disease is comparatively unknown."

Sir James Paget, in a letter to me upon this point, says: "I have not seen or heard of foot-and-mouth disease communicated to persons in this country. I have asked some of those likely to have known of such cases if they had occurred, but I have learned nothing from them."

Prof. Thomas Walley, of the Royal Dick'd Veterinary College, Edinburgh, Scotland, says in a communication to me: "Very few people contract eczema" (foot-and-mouth disease). Prof. E. Klein, in speaking upon the same matter, says:

My Dear Sir:—In answer to your letter of October 29, 1889, as to whether many of the people of Great Britain have had foot-and-mouth disease, I must say that during the nineteen years that I have resided in this country, I have heard of some outbreaks of foot-and-mouth disease amongst the people in various localities, but they were always *localized, and did not involve many cases.* I must say that I have never been more surprised than when you told me, in your letter, that Prof. Law offered the remark, that *many* persons in England have had foot-and-mouth disease. As a *matter of fact*, the contrary is the case. During the last four or five years, I have not heard of any appreciable amount of foot-and-mouth disease; in fact, I do not think there has been any epidemic of it. I have made inquiries of several friends in the country, and I hear from them that many practitioners have never seen a case in the human—in fact, some, in practice during the last four years, did not know it to have occurred in a single instance in their districts. Only a few weeks back, I had a class in bacteriology in which were twelve gentlemen, in practice as health officers in various parts of England. Every one of them to whom I put your question, laughed at the idea that foot-and-mouth disease is alleged to be a common disease in man in this country.

These gentlemen evidently do not agree with Prof. Law upon the above point. Even if we assume that the disease is more common than it is supposed to be, such *facts* as are set forth in this paper concerning it, in its relation to scarlatina, have never been noticed or commented upon, and to my mind are not affected by the statement that scarlatina is very prevalent in Great Britain. Dr. J. Lewis Smith said, in discussing my former paper: "Since the time of Jenner, the hope has been awakened, that some of the other fatal infectious diseases, and especially scarlet fever, might be prevented, as small-pox has been, by the inoculation of a milder and modified disease derived from the lower animals." Now let me ask my professional brothers, in a spirit of perfect candor and honest inquiry, if in the evidence furnished by the epidemics in England, the *facts* concerning which are herein quoted, we have not a fairly secure basis upon which to build the hope, that scarlatina may be either prevented or modified, by introducing into the human system properly prepared and attenuated foot-and-mouth disease virus. Let me also ask if enough cases have not been quoted; a sufficient number of experiments performed; and the ultimate results of sufficient importance, to warrant a more extended trial being made of this proposed method of preventing the development of, or modifying, one of our most fatal and dreaded diseases? No theoretical objection, however adroit and well planned, can settle the question before us; further actual experience with the diseases in their clinical and apparently prophylactic relations to each other must be had, before any one can positively deny, or prove to be true that which *seems to be a fact*, namely, that *scarlatina* and foot-and-mouth disease are mutually protective.

Suppose some drug had been administered to certain members of eight families in Dover, England, prior to the appearance of the "throat epidemic," and that when the families were exposed to the contagium of the epidemic disease, only those who had taken the drug escaped, while every other member contracted the disease. Do you not think that drug would have a new interest, and be given a fair trial, in order to determine beyond dispute whether it would, in the majority of cases, exercise this preventive influence. Now, why not, instead of saying, How can this be true? or, This cannot possibly be realized—give the proposed method a fair, honest trial, just as you would give the drug a fair trial, or just as Jenner gave his method a trial, and then be guided in the future by the results. Suppose a certain number of children, in a children's hospital for the treatment of contagious diseases, were inoculated with a modified virus of foot-and-mouth disease, and after recovery from the effects of such treatment, should be put into a ward with scarlatinal patients, and allowed to remain sufficiently long to be thoroughly exposed to the contagium of the disease, would not that be a fair way to settle the question? What I wish, is simply to determine positively, and as soon as possible, whether the escape from the "throat epidemic" of certain individuals, in the two epidemics in England, and of the three children from scarlatina whom I inoculated with the virus of foot-and-mouth disease, be due to the protective influence of the one disease against the other, as appears to be the case. If we learn that we may thus prevent the development of a disease so common, oft-times so fatal, and so frequently followed by distressing sequelæ, will we not confer a blessing upon those who are susceptible to its contagium? If, on the other hand, we discover that we cannot, in the majority of instances, confer this immunity, we shall at least have made a commendable effort to realize that which a large number of clinical facts seemed to indicate as possible of accomplishment.

CHATTANOOGA AS A HEALTH RESORT.

Read in the Section of State Medicine at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May 21, 1890.

BY W. C. TOWNES, Ph.B., M.D. (UNIV. OF PA.),
PROFESSOR OF CHEMISTRY AND TOXICOLOGY IN THE CHATTANOOGA MEDICAL COLLEGE.

It has been said, "Earth has no sorrow that Heaven can not heal." It may be quite true, and may be otherwise. In a medical way it is prognostic rather than diagnostic. We prefer to admit it, but it does not fully satisfy. Most persons continue to seek relief in this life. The afflicted appeal to us now as ever before, and will hereafter till the causes be removed. The world is full of victims, and it is said not less than several thousand years ago, they are with us always, those with too much poverty, as also too much wealth. The consumptive, the strumous, the cachectic of wide degree, all ask to be cured *now*. The vast majority of invalids are so surrounded, and have such maladies, that they are best attended to in hospitals, or their own homes. There are, however, few practitioners who do not have some patients who would flourish best under different hygienic conditions, and are so circumstanced that they can afford to undertake a climatic change. It is in the interest of such that the following suggestions are addressed.

Chattanooga, that pushing, enterprising and plucky city of this genial Southland, numbering now her 50,000 souls, is situated on the southern bank of the Tennessee river, on the extreme southeastern border of the State. Surrounded by mountains and ridges on every side—Lookout Mountain, that grand old mountain, which stands there silent and glorious, like the Egyptian Sphinx, with its many secrets, witnessing the evolutions and translations that have, are and

will be made; Walden Ridge, whose brow is said never to have been furrowed by a case of consumption; Missionary Ridge, rendered historic by means of its many desperate and bloody battles; —Chattanooga, I say, stands as the centre of the New South with her many manufacturing interests, with her cosmopolitan population, and her hills and lands in the near vicinity filled with coal and iron in inexhaustible quantities, and the necessities of life within reach of him who will but stretch forth his hand. An adopted citizen who lives here because he shares her adversity and prosperity, her climate, and loves her people, applauds this city and gives his views as to her health and invigorating climate, and the health resorts all around her borders.

One of the most important points in favor of a spot as a health resort is its accessibility, and, indeed, what more could you wish than is shown in Chattanooga? Extensive systems of railroads, that reach out to all points of the compass; one may come from the North, East, West, or South. A visitor procuring for himself a sleeping car berth at his former home reaches this city in a few hours' travel with the minimum of inconvenience; and once in the city, he may go by rail to any of the mountain tops that I have mentioned, in a few moments' time.

Lookout has its cable incline and its standard gauge steam railway, each having just completed large and magnificent hotels at its terminus.

Missionary Ridge, dotted with its many handsome residences, is reached by an electric railway, cars leaving the centre of the city every few minutes. Walden's Ridge, across the river, which is now being spanned by massive iron bridges, is surveyed for electric and steam railways, requiring less than an hour to reach its broad plateau.

From these conditions you will see the city has within easy reach plenty of elevations, cool and exceptionally healthy, to which its people can go in all seasons. On the plateau many of the citizens now have summer cottages, some who take boarders, and hotels are convenient, well equipped and plenty; and in these various houses all the luxuries and comforts that the invalid may require are to be had at fair and moderate charges.

The scenery in and around Chattanooga is ever varying and beautiful. The air is exhilarating and invigorating to those who need and desire it. There is ample opportunity for mountain climbing, with all its resultant benefits: expanding the chest, exciting respiration, increasing muscular vigor, and sending the blood bounding through the capillaries, giving tone to the system, firmness to the flesh, and health to the invalid; and to those who are not so afflicted, making the weak strong, and the strong robust.

Boating excursions up and down the Tennessee river may be, and are often, indulged in, giving a change of beautiful and attractive scenery equal to, and in many respects surpassing, that along the Hudson and the Rhine, except as to the historic interest in the one, and ruined castles in the other, both of which I have seen.

Suitable climate is a paramount necessity for invalids, but the accessory advantages of social surroundings are quite as important; in order to obtain the maximum benefit of climatic influences, mental repose and pleasant companions are indispensable. Many an invalid who leaves home and friends to regain, at some distant resort, the health which is denied him among those who are dear to him, finds himself among strangers, from whom he fails to derive the sympathy and attention that his state of health requires; he becomes despondent, and returns home unbenefited and blaming the resort for his unimproved condition. To those who are unable to be accompanied by friends or relatives in their search for health, the hospitality and social temperament which pervades this cosmopolitan Chattanooga district generally will go very far to relieve the sense of loneliness and consequent yearning after home that oppresses the mind and retards physical exercise and recuperation in most of the hygienic and sanatory resorts.

The purification of the atmosphere, and the oft repeated renewal of the tonic and electric conditions, are processes constantly impressed upon the mind of the inquirer into high altitude effects, whether he explains it on the theory that the mountains are constantly giving off the electrical force engendered nearer the center of the earth, or whether he sees in the positive electric state of the dry air the facility in the mountains for an easy interchange between this and the negative electric state of the ground.

We find, too, that the therapeutic conditions of the dryness and atmospheric rarefaction affect him in proportion to the elevation of his abode above the sea-level and above the underlying lands.

And here in Chattanooga do we find these conditions well exemplified. The city, which is protected on all sides, lies in a basin with an elevation of 640 feet above the sea-level. The highest point of Lookout Mountain is 1,780 feet above the rives, and Walden's Ridge is about 1,000 feet, and Missionary Ridge 490 feet, giving, you see, complete protection to the city on all sides.

The city is subject to very little cold, as compared with others of similar size in our neighborhood, for instance Memphis, Nashville and Birmingham. These cities have no mountains which ward off the winds, and when they blow over the country these various places feel the chilling effects, while in Chattanooga we have only a moderate fall of temperature—enough to let us know that a cold wave is passing over the country.

The observations as given by the U. S. Signal

Service show that the lowest temperature generally occurs in Chattanooga about January 1 to 12, and the highest in July. The average temperature for each day in the year is 59.7°; at Toledo, 50.5°; Albany, 48.4°; San Antonio, Texas, 69°. This last station is considered by the U. S. Government as the healthiest place in the States, but the official records show it to be 9° warmer than Chattanooga. A lower mean annual temperature can be obtained from any of the mountain tops in the vicinity of Chattanooga, the temperature between the city and Lookout Mountain being 8°. The mean annual range of temperature for this city is 18°, while for the cities mentioned above it is from 20° to 16°. The highest temperature for Chattanooga is 101° in July, 1879, the lowest temperature on January 11, 1886, 7°, showing a range in nine years of 91.7°; in San Antonio the highest (1880) showing a range of 98°.

Now, if we take the city of Nashville we find the official records show that the highest temperature recorded in twelve years was 104° in 1874, and the lowest 10.2° below zero in 1884, giving a range of 114.2°, or a range of 22.5° greater than at Chattanooga.

An item of practical importance is the dew-point, since it shows the point near which the descent of the temperature of the air during the night will be arrested; for when the air has been cooled down by radiation to this point, dew is deposited and latent heat is set free. The amount of heat thus freed being great, the temperature of the air is raised; but as the cooling by radiation proceeds, the air again falls to a little under the dew point; dew is again deposited, heat liberated, and the temperature raised. Thus we can determine the dew point and the minimum temperature.

The relative average annual humidity of Chattanooga is 71 per cent., Cincinnati 67.7 per cent., Bismarck 82.8 per cent., Nashville 71.1 per cent.

The average annual number of clear days in this district is 117, fair 147, cloudy 101, giving a number in favor of Chattanooga, as compared with the above mentioned cities, ranging from sixteen to twenty-one days.

Now, gentlemen, you will see from the facts and figures here stated that Chattanooga is well located and sufficiently elevated and varied in its scenic attractions, and is destined to become one of the most renowned of health resorts. Allow me to close this section on climate by quoting the words of a Northern physician, made in a public speech some time since:

"Who among us is not mindful of the rich delights of our usual March climate? March, that month of terror in other latitudes, brings us the blossoms of Spring in rich profusion, the working days in our gardens and flower-beds, and gives us a noonday warmth of 80°, while the coolness of night rarely causes the mercury to fall to 40°. April follows with its luxuriant wealth of flowers in field, forest and lawn; the rich and varied verdure of the mountain slopes; the grand picnic days; the profusion of blossoming laurel and azalea; the time when we feel most the exhilaration of a tonic atmosphere, and youth comes again to age. And then follows May; beautiful, beautiful, glorious May! Who can describe an East Tennessee May in any other way than by exclamations? May flowers? No, indeed; we squander those in March. We hurry past our roses of the commoner sorts in April, and come into realization of the complete bliss of living in the real native land of the continual blossoming rose in the early days of May, when the black boys peddle young mocking-birds through the streets, and the luscious red strawberries come, so sweet, so plenty, and so welcome. And then comes June; young summer, older than May, wiser, larger, fuller, and bringing the first harvests of ripened grain; holding in its provident lap the most liberal bestowals of the Almighty in rewards for the labors of man, with a great bonus of earth's spontaneous fruits.

"Can a better summer resort be pictured? If consumptives want altitude and mild climate together, and upon that all authorities agree, it is to be found here. These mountains are so common to us, who use them for daily, weekly and monthly convenience in the summer days, a sleeping place away from the dust and mosquitoes, as well as cooler home quarters, that we have no just appreciation of them; but the mountains of East Tennessee are destined to occupy a high place in the public estimation, in future, as a living-place for invalids."

Now, more than three years ago Chattanooga had one mile of brick sewer, with no paved street. The garbage and refuse matter was thrown into the streets and alleys, and had a death-rate of twenty-two to the thousand population per annum. At the present time she has over fifteen miles of main and lateral sewers made of brick and clay pipe ranging from 12 to 15 inches in diameter. Since the sewers were well started and the work of the health officer, with his corps of scavengers, was duly organized, the death-rate of the city has steadily decreased until it now stands in the winter months at 8 per 1,000, with 62 per 1,000 per year for both races; but you must remember, gentlemen, that this number is greatly increased by those who meet with violent deaths from whatsoever cause, and by those who come here from other places nearly dead of their disease, and by those who are shipped here for interment.

The following table shows you the comparative mortuary reports for November, 1889:

Chattanooga	12	per 1,000 per annum.
Knoxville	13.44	" "

Nashville	14.45	per 1,000 per annum.
Memphis	22.04	" "
Chattanooga, April, 1890	12.6	" "

If our population were entirely white, the rate would run in ordinary years below 8.5 or 9 per 1,000.

This last topic is the most important one, and in it I wish to present to your minds the great freedom from many of the diseases that human beings are heir to, and show the method that may be adopted in the healing of the affections that we have to contend with.

Until the last three years Chattanooga was regarded as a hot-bed of malaria, but the greatly improved sanitary condition of the city has removed this element to a very great extent, and in a fair practice in and about the city I have seen but one case of malaria, though a number of cases have come under my notice who live in the other towns and cities west and south of us. For instance, Miss S., whose home is in Middle Georgia, came to Chattanooga in December, 1889, suffering from malarial fever, having chills every day. This had been her condition for nearly five months past. Under the influence of quinine, calomel and arsenic, in three weeks' time was entirely relieved, and now has gained 37 pounds in flesh.

The various acute infectious diseases exist here only in a limited number and degree, as shown in the official report of December, 1889, for the preceding year: Number of deaths from typhoid fever, 19; scarlatina, 1; measles, 2; diphtheria, 2; dysentery and diarrhœa, 51; whooping-cough, 1.

The increased number of diarrhœal troubles is among those who have recently come to the city, and being invigorated by the delightful change of air, indulge too much in the delicious viands and drinks of the table.

It has been my pleasure to witness patients suffering with catarrhal conditions of the respiratory tract derive the utmost benefit from a prolonged stay in this latitude, and many greatly improved by a month's or more visit to friends and relatives in Chattanooga.

The condition which is aided most, and in a large proportion of the cases cured by treatment here, is pulmonary consumption. Allow me, gentlemen, to tell you two cases that have been absolutely cured of their troubles, and the manner in which it was accomplished.

Case 1.—Dr. W. A. Dietrich, of Indiana, began coughing in the spring of 1888. His cough grew gradually worse, yet he paid no attention to it until August, when he had an attack of hæmoptysis. He expectorated blood constantly for one week, and then went to Chicago to consult Dr. J. P. Ross, of the Rush Medical College, who diagnosed it as phthisis with a tubercular deposit in the superior and middle lobes of the right lung. Dr. Ross advised him to go to Lookout Mountain. Dr. D. then returned to his home in Indiana, and during the following four weeks he had several slight hæmorrhages, a severe cough, night-sweats, anorexia, and a rapid loss in weight and strength, he having lost 25 pounds in weight since he first began coughing. The latter part of September he left Indiana for Lookout Mountain, but first went to Chicago to again consult Dr. Ross, who said the deposit was increasing in size. Shortly after reaching the mountain his cough began to decrease, expectorations became less, appetite increased, night-sweats ceased, and he rapidly gained in health and strength, until now there is not a trace of tubercular trouble to be detected in his lungs, and he weighs more than he ever did in the North. The doctor now enjoys the best of health, and has made Lookout Mountain his permanent home, where he anticipates opening a sanitarium for the benefit of those afflicted as he was.

Case 2.—Mr. J. J. Heelan, of Chicago, began coughing in November, 1886, became hoarse a few weeks afterwards, and by the second week in December was so hoarse that he could not speak above a whisper. At that time he had a severe cough, with night-sweats, anorexia, and considerable emaciation. He consulted numerous physicians, who diagnosed it as tubercular phthisis. He received no benefit from their treatment, and by the second week in January, 1887, was confined to his bed, where he remained two weeks. Was then examined by Dr. Ross, who said he could not live six weeks longer if he remained in Chicago. The doctor advised him to go to Lookout Mountain, but instead of going direct to the mountain he went to Massachusetts and remained one month, and arrived on Lookout the 17th of March, 1887. The same day that he arrived Dr. Ross again examined him, and said that he not only had tubercular deposits scattered all through his left lung, but also had them in the right, and that he (the doctor) could not give him as much encouragement as when he left Chicago. The doctor told him to try the climate one month and see whether it would benefit him. When the month was up he noticed a slight improvement and concluded to remain. The following July Dr. Ross again examined his lungs and found the deposits in his left lung clearing away, with a very noticeable improvement in his general appearance. In the fall he underwent another examination by the doctor, who said that the deposits in his left lung had almost cleared up, with some improvement in the right lung. In March, 1888, just one year after coming to the mountain, the doctor again examined him and found both lungs clear, with the exception of a slight deposit about the size of a quarter in the apex of the right lung. In September, 1888, the doctor again visited the mountain and examined his lungs, and told him that it would take an expert to tell

whether he had ever had any pulmonary disease. He has coughed none since 1888, and at present there is no trace of the former tubercular trouble.

I wish to state that in these two cases the treatment was as follows: A tonic of iron and quinine, inflation of lungs, while in-doors, by muscular effort, daily walks to various points of interest on the mountain and ridges, and to the city when necessary, carrying luncheon with them, regardless of the weather, unless extremely inclement, always clothing themselves suitably to the season.

Should any of my hearers have the *Medical News* of Sept. 28, 1889, I should be glad to have you read the article by Dr. H. I. Bowditch on "Open Air Travel as a Cure of Consumption," in corroboration of the above treatment.

Thanking you for your patient indulgence, I will close with this brief summary: Chattanooga as a health resort presents herself as a place with a pleasant historic interest.

A city easily accessible from all parts of the Union, with a varied and extensive change of scenery; with climatic conditions, all told, unsurpassed by any point in this country.

In comparison with her neighboring cities, her death-rate is the smallest, and her sanitary and sanatory conditions greatly increasing.

And, finally, the variety of diseases is limited, they can be well treated, and with the most gratifying success in the vast majority of cases.

Rooms 133–4 Richardson Building.

PROSTATITIS AND PROSTATIC ABSCESS.

Read by Title in the Section of Surgery and Anatomy at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY RICHARD H. HARTE, M.D.,

DEMONSTRATOR AND LECTURER ON OSTEOLOGY UNIVERSITY OF PENNSYLVANIA, SURGEON TO THE EPISCOPAL, ST. MARY'S, AND OUT-PATIENT DEPARTMENT PENNSYLVANIA HOSPITALS, ETC.

In entering upon a study of certain pathological conditions of the prostate, there appears to exist a peculiar necessity for observing accurately its normal structure, conformation and anatomical relations with the rectum and the bladder on one hand and the urethra on the other.

The prostate is commonly said to resemble a horse chestnut somewhat in shape and size, the small extremity being directed downwards and forward, and the base upwards and backwards, in the erect position of the body. The upper surface is directed forward to the deep perineal fascia which it touches.

The base is smooth and rests on the rectum, to which it is connected by dense areolar fibrous tissue. When the prostate is thoroughly isolated from the surrounding parts by dissection, it presents something the shape of a truncated cone. The normal adult gland measures about one and one-half inches in its tranverse diameter and its base, an inch antero-posteriorly, and three-quarters of an inch in depth. Weight about five drachms, and is held in position by the two anterior ligaments of the bladder and by the posterior layer of the deep perineal fascia which invests the beginning of the membranous portion of the urethra and prostate gland, and by the anterior portion of the levator and ani muscle which passes down from the side of the pubic symphysis and the anterior ligament of the bladder.

The prostate is usually regarded as consisting of three lobes, two lateral which are symmetrical, and a middle or third lobe between them and behind the urethra. It was first spoken of by Sir E. Home, although its existence was well recognized by Morgagni, John Hunter, and others. This so-called third lobe is not always constant. Sir Henry Thompson considers it rather more of an abnormal condition when found in persons under 50 years of age; and he regards it as due to an hypertrophy of the large amount of glandular tissue which exists in this portion of the prostate.

Commencing at the neck of the bladder the urethra continues through the prostate downwards and slightly forwards, the larger portions of the gland lying on either side, and about one-third above and two thirds below the urethra. The vesical boundary of the prostatic urethra is the uvula vesicæ, seen as a slightly rounded prominence on the floor of the bladder. In front of this may be observed twenty to thirty small openings — the mouths of the prostatic ducts—which can be seen with a small magnifying glass, and are usually arranged on either side of the verumontanum. The length of the prostatic urethra varies from one and one-eighth to one and one-fourth inches. The utricle (vesicæ prostatica), the supposed analogue of the uterus, is a small sac opening on the anterior portion of the verumontanum, oval in shape, lined with mucous membrane which sometimes secretes a dark, reddish-brown jelly-like material. The common ejaculatory duct formed by the junction of the vesicula seminalis and vas deferens internus with its fellow of the opposite side at the base of the prostate, about three to four lines below the opening which transmits the urethra.

The prostate is inclosed in a thin but firm fibrous capsule distinct from that derived from the posterior layer of the deep perineal fascia, and separated from it by a plexus of veins. (Gray). The prostate is composed of glandular and muscular substance. The muscular substance, according to Kölliker, constitutes the proper stroma of the prostate, the connective tissue being very scanty, and simply forming the trabeculæ between the muscular fibres in which the blood-vessels and nerves of the gland ramify.

The urethral or anterior portion is largely supplied with muscular tissue; whereas the posterior or vessical portion contains more of the glandular structure. The prostate is usually classified with the multilocular or compound racemose glands of which the salivary or pancreatic are types. The prostatic ducts open into the urethra on either side of the verumontanum. The function of this glandular structure appears to be to secrete a fluid not unlike milk and water in character, known as the liquor prostaticus, slightly acid in reaction, and under the microscope seen to consist of a large quantity of pavement and cylindrical epithelial cells. Its use is not definitely known, but it is supposed by some to assist in diluting the spermatic fluid in order to enable its reaching and impregnating the ovum in the vagina. (Hodgson.) The glands of Cowper, and the folicles of the urethra undoubtedly assist in this diluting process.

The arterial supply of the prostate is derived from the internal, pudic, vesical, and hæmorrhoidal arteries. The veins form a plexus around the base and sides of the prostate, and receive in front the dorsal vein of the penis, terminating in the internal iliac vein. The nerve supply is derived from the hypogastric plexus. The tissues to be encountered in an incision in the median line going from without into the prostate are: 1, the skin; 2, superficial fascia, with its superficial and deep layers; 3, fibres of the accelerator urinæ muscle; 4, deep perineal fascia; 5, levator ani muscle; 6, capsule of the gland.

This now brings us to consider two conditions which are closely allied to each other—inflammation with and without suppuration of the prostate, the latter often supervening on the former.

Acute inflammation of the prostate is not a common affection, when unassociated with other inflammations of the urinary tract. The prostate being rather non-inflammatory in character may serve a useful purpose in checking the extension of inflammation from the much exposed and susceptible urethra below, to the more vital organs above. These structural differences acting as a barrier, and tending to limit the progress of a variety of certain pathological conditions. (Harrison. Ashhurst's Encyclopædia, Vol. 1). Occasionally it is found influenced apparently as a pure idiopathic occurrence, and not from continuity of tissue with surrounding parts.

The causes of inflammation of the prostate are inflammation of the urethra, especially gonorrhœal, by continuity as before stated.

Stricture of the urethra in aggravated form, particularly those deep in the urethra and near the prostate.

Calculi in the bladder and of the prostate.

Direct application of irritants in the shape of strong injections and applications, traumatism, violence from the passage of instruments, cold, damp, as from sitting on the ground. Pyæmia is a frequent cause of prostatitis which shortly runs into the formation of abscess, probably the result of a thrombi in the prostatic plexus. These, as a rule, are seldom detected before death, as they are liable to be masked by the other more distressing symptoms. I once found an abscess of this sort in a patient who died from pyæmia while I was House Surgeon at the University Hospital. The abscess was about the size of a hazel-nut, and situated near the orifice of the urethra and quite superficial, being just below the mucous membrane.

Among the abuses which may be stated as predisposing factors in producing the affection are excessive use of alcohol, venery, horseback riding, drastic purges, highly seasoned food, ascarides, hæmorrhoids, constipation and sedentary habits. It is probable that the two latter tend to produce a condition of the veins of the abdomen and those of the prostate which may prove slight predisposing causes.

Morbid Anatomy.—It is very difficult to get an opportunity to examine the prostate in the acute inflammatory stage, as many cases go on to resolution without suppuration. The organ may be swollen to twice or quadruple its normal size, full, tense, and firm to the finger, and yet gradually subside without the formation of pus. If the inflammatory action advances, the prostatic fluid will be found to be mixed with pus. If section is made into the gland, small points of pus will be found, not frank abscesses, but as the secretion of the gland crypts whose cavities are distended with it. If resolution does not take place, and the morbid action continues with the formation of a number of small abscesses varying from a millet seed to a pea in size, these may be increased by running into each other, the intervening tissue finally breaking down, often accompanied by small hæmorrhages into the abscess cavity, or into the gland crypts. Portions of the organ may become softened or sphacelated, or even gangrenous as stated by Brumstead. The mucous membrane of the prostatic urethra is inflamed, thickened, and sometimes has a membrane-like deposit, the result of inflammatory lymph.

It is generally observed that the pus of prostatic abscesses is glutinous or sticky in character, generally differing from the ordinary healthy pus found in other parts of the body. Abscess may form in the prostate in different ways. Acute abscess sometimes develop rapidly in prostatitis and quickly discharge themselves most commonly into the urethra. By inserting the finger into the rectum the prostate will feel full and tense and much larger than normal. If two fingers are inserted, fluctuation may be readily detected. Suddenly a discharge of pus may take place by the urethra and all symptoms may rapidly disap-

pear, which is a most favorable result; or the abscess may burst into the rectum often leaving behind a vesico-rectal fistula. In rare cases the matter will work its way up between the bladder and the rectum into the peritoneal cavity, causing general peritonitis and death. A unique case of prostatic abscess is reported by Dr. Deaver, where it opened above Poupart's ligament. Rarely, I think, will prostatic abscesses point into the perineum, owing to the fact that pus will always burrow or work its way towards the point offering the least resistance, and the deep perineal fascia here acts as a great barrier.

Prostatic abscesses may also assume a chronic condition in a variety of ways.

1. The ordinary abscess may refuse to heal.

2. The essentially chronic tubercular suppuration may take place in the prostate.

3. Abscess may be established by the presence of a foreign body as a calculi imbedded in the gland.

4. Malignant growth may be the cause of a chronic suppurative process.

The earlier symptoms of prostatitis, or a sense of weight and fulness about the rectum and perineum with some pain and uneasiness referred to the neck of the bladder, a frequent desire to void the urine, which is accompanied by an increase of pain, especially at the close of the act. As the disease advances these symptoms increase in intensity, the pain becomes more lancinating and pulsatile in character; a sense of swelling and tension is experienced in the anus and perineum; movements of the body are accompanied with severe pain; aggravated by attempts at stool, and more so by the act of micturition; the stream of urine is small, its passage prolonged, accompanied by much tenesmus. As the swelling increases in size complete retention may follow and last for days, requiring the use of the catheter, the introduction of which always produces a great deal of pain when it arrives at the prostatic portion of the urethra. Septic fever manifests itself after the earlier local symptoms, rigors often accompanying the onset of suppuration; not infrequently pain in the back and loins running down the thighs and the glans penis, and a sensation of a constant desire to go to stool, with great tension, weight and pulsation in the perineum and neck of the bladder. After four to six days, if the acute symptoms do not subside, suppuration may be suspected. This fact is easily determined by introducing the finger into the rectum; if the swelling then increases and communicates to the finger a sense of softness and elasticity in place of the firmness and resistance which before existed, an abscess cavity must be recognized. This examination often causes intense pain, and requires the utmost gentleness on the part of the surgeon. Pressure on the perineum may also reveal great tenderness, but rarely can fluctuation ever be satisfactorily detected there, owing to the depth and firmness of the tissues in spontaneous evacuation. The usual course for abscesses situated near the mucous surface of the prostate is to evacuate themselves either into the bladder or urethra. Sometimes the contents of an abscess will be discharged through a catheter in the attempt to relieve retention which is so common in these cases, the catheter breaking through the abscess wall. Undetected abscess of the prostate frequently burst into the rectum, and may or may not leave a fistulous opening between the bladder and rectum. Sir Henry Thompson cites a case where a patient of his while at stool suddenly evacuated two ounces of healthy pus, which was followed by a less amount each day until the cavity closed. My colleague, Dr. John B. Deaver, has furnished me with the notes of a case of tubercular abscess of the prostate which first made its appearance by pointing above Poupart's ligament on the right side, where it was opened with some temporary relief to the patient, in the belief that it was a tubercular abscess of the inguinal glands. A month later a similar lump made its appearance in the opposite groin, pointed, and was opened. The patient soon died. The post-mortem showed the prostate to be the seat of an abscess with tubercular deposits in the lungs and kidneys.

A somewhat similar case occurred in my own practice of tubercular character, where the pus was discharged by the urethra. The bladder symptoms had extended for a period of over ten years with the passage of blood and pus at times. The patient had been in the hands of most skilful specialists, but the exact character was not made clear until after death. The autopsy revealed a large tubercular abscess which had discharged into the urethra, with almost complete destruction of the entire prostate. Tubercular deposits were found spread over the surface of the bladder, the latter being contracted and thickened. There was also involvement of both kidneys and lungs.

From what has been said, the diagnosis of prostatitis running into abscess, or abscess itself, can with care be easily made out, if sufficient care is exercised and time is given to the examination of the patient. Prostatitis and abscess are most likely to be confounded with cystitis or vesical calculus, the former of which is by far the more common affection. The latter is easily excluded by its prolonged history and insidious character. It must be borne in mind, however, that both of these conditions may antedate an existing prostatic abscess.

The distinction between cystitis and prostatitis may be easily established by marking the following conditions:

PROSTATITIS.	CYSTITIS.
1. Not a common disease.	1. A common disease.
2. Pain chiefly restricted to perineum and anus, and accompanied by fulness.	2. Not so limited and little if any perineal or rectal fulness.
3. Pain violent and throbbing.	3. Pain is not throbbing.
4. Stream of urine diminished in size.	4. Stream of urine may be normal in size.
5. Pain aggravated during defecation.	5. Not necessarily so.
6. Retention of urine probable.	6. Improbable.
7. Digital examination of the rectum reveals marked swelling and tenderness of the prostate.	7. No enlargement, and little tenderness.

The treatment of prostatitis or abscess, constitutes the ordinary constitutional treatment for inflammation. The bowels should be gently opened by an enema. Purges are to be strongly contra-indicated.

So great an authority as Mr. Harrison says that he would just as much think of ordering a man to walk a mile with an acute synovitis, as to order a patient suffering from prostatitis a purge—still, the bowels are to be kept, if possible, in a soluble condition. The local treatment demands special attention. Bleeding affords more relief than any single agent, preferably by means of leeches to the perineum, ten to a dozen being applied. Some advise the application of leeches to the rectum by means of a specially devised tube for the purpose, with cupping of the perineum, until six to ten ounces of blood are removed. This is often difficult to accomplish and requires a degree of skill that is not always to be procured. Hot hip baths at temperature 100 raised to 105, but continued for a short time, and frequently repeated. Hot water thrown into the bowel often affords great relief.

Mr. Guthrie advises at times the washing out of the bladder with hot water in which a little acetate of morphia has been added. This may be done at the time the catheter is passed, in order to relieve the retention. The too frequent passage of the instrument is to be avoided, and in the acute stage of the disease the catheter should never be left in the bladder, as its presence only adds fuel to the flame. Some have advised the use in a similar way of ice. As a rule this is not grateful to the patient. Probably one of the most troublesome conditions to be met with is the retention which will require the use of a catheter from three to four times a day. The best instrument is the soft rubber one, about No. 14 French, a small instrument meeting with less resistance in passing through the inflamed prostatic urethra. Instant relief is often afforded by the sudden escape of pus by the rupture of the abscess. Pain is to be relieved by the free use of opium or morphia combined with belladonna by the mouth or rectum, preferably the latter if the introduction of a suppository is not accompanied by too much pain. The diet is to be light and non-irritating.

If the inflammation goes on to suppuration, making itself manifest by fluctuation in the rectum, and accompanied by chill and other signs of pus formation, its immediate evacuation is imperative. As to this point authorities are at variance. Some prefer puncture through the rectum, others attempting to rupture the abscess into the bladder by the introduction of a sound, making pressure between the end of the finger in the rectum and the tip of the sound. A catheter with a stylet has been devised for this purpose.

Incision in the median line with a long straight bistory, the finger of the left hand having been inserted into the bowel, the point of entrance being about three-fourths of an inch in front of the anus in the line of the raphe. The depth of such an incision should be from one and one-half to two inches; less than that will in all probability be worse than useless.

English, of Vienna, advises an incision similar to that practiced for lateral lithotomy, cutting down upon a staff. The latter operation seems to be only indicated when the abscess is confined to one lobe of the prostate, besides being a much more formidable operation for the average practitioner, and liable to be followed by more or less bleeding as in all probability the transverse perineal artery will be cut. I opened an abscess of the prostate in the median line following an obstinate stricture which gave immediate relief, the urine ceasing to flow through the opening in two days. It is sometimes well after the deep perineal fascia has been divided, to work down, or rather up, with a grooved director; in that way the abscess can sometimes be easily ruptured, even if only one of the lateral lobes are affected. The opening made through the rectum as advised by Mr. Collins, ordinarily is to be deprecated, although many cases will do well if so treated. Mr. Meade (*Medical Times*, Oct. 20, p. 60) reports half a dozen cases where this treatment was pursued, and strongly advocates it. If the surgeon could be assured that no communication with the bladder would follow; leaving a urethro-rectal fistula, there might be some grounds for advising this mode of dealing with an abscess in this region. If the abscess points, bursts into the peritoneal cavity working its way up through the recto-vesical space, nothing is left but to open the abdomen in the median line, wash it out thoroughly and draining—the treatment similar to that pursued for other pelvic collections of matter. A case similar to this is cited by Mr. Adams in his work on diseases of the prostate gland. It, however, terminated fatally by peritonitis.

The discharge of matter from an acute abscess is sometimes followed by prolonged suppuration,

forming what is known as a chronic abscess. However, this chronic suppuration is always due to some cause as imperfect drainage, as stricture of the urethra, or a tubercular abscess which refuses to heal, owing to the tubercular irritation coming from further up the urinary tract, etc. In all operative measures that may be pursued on the prostate the patient is to be etherized and placed in the lithotomy position, the bowel having been previously cleansed out with a warm enema of soap and water. After the contents of the abscess have been evacuated, it should be washed out with a solution of bichloride of mercury 1–2000. If it is of a tubercular character, scraping the abscess cavity with a curette and washing out with the same solution. This class of patients always require a very supporting treatment, quinine, cod-liver oil stimulant, and under the most favorable circumstances the ultimate prognosis is not very encouraging. From what has been said the surgeon, if careful, can hardly fail to make a satisfactory diagnosis if care and time is taken in making an examination, which is never complete without having thoroughly explored the rectum with the finger.

I have heard the late Dr. J. H. Hutchinson say, that far more errors were made through the imperfect examination of patients, than from ignorance on the part of the physician. The method of treatment by incision in the median line up and into the prostate, evacuating the contents of the abscess, is to my mind the safest, surest and most reliable means of dealing with this class of affections, and is preëminently the one to be strongly advised, giving perfect drainage and avoiding all risks of subsequent complications.

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"Agnew's Surgery;" "Ashhurst's Surgery;" Thompson, "Diseases of the Prostate;" Ottis, "Genito-Urinary Diseases;" Harrison, "Surgical Disease of the Urinary Organs;" Hodgson, on "The Prostate Gland;" Guthrie, on "Disease of the Bladder and Urethra;" "American Encyclopædic Surgery;" Ashhurst, "Real Encyclopædia;" "Gray's Anatomy;" "McAllister's Anatomy;" Coulson, on "The Bladder and Prostate;" Sir B. Brodie, "Diseases of the Urinary Organs;" Acton, "Diseases of the Urinary and Generative Organs;" Gouley, "Diseases of the Urinary Organs;" Gross, "Diseases of the Urinary Organs."

MEDICAL PROGRESS.

HEREDITARY CATARACT.—DR. FUKOLA (*Internat. Klin. Rundschau*), was consulted in May, 1889, by A. R., female, æt. 30 years. She wished to have her eyes examined, to know if they were free from cataract, as that trouble had frequently presented itself in the family. The great-grandmother of the patient had marked impairment of vision, the nature of the trouble being unknown. The grandmother of the patient had double cataract when 40 years of age. Of the thirteen children of this grandmother, nine had cataract, one of whom was the mother of the patient. They all developed the disease comparatively young, one at 20, and the latest at 40. The anxiety in this family is so great that some of them will not marry, for fear of transmitting the disease to offspring. An aunt of the patient had five children, three of whom had cataracts at the age of 20, 22, and 33 years. Another aunt that had emigrated to America, had two children out of ten affected. The mother of the patient had five children, three of whom had cataract. Two uncles also had one child, each, with cataract.

Another case was that of Mrs. S., who had a brother and sister similarly affected, as well as a grandmother and an aunt.

Elizabeth B. was operated for cataract when 62 years of age, her brother, of about the same age, being similarly affected.

Two children, brother and sister, presented cataracts. They were strong and healthy. No other members of the family affected.

The writer adds, at the close, that hereditary cataract generally affects young persons—in the first family, those from 20 to 40 years of age, the oldest 50. In all cases, the urine was carefully examined.

TOXALBUMEN.—(*Berlin Klin. Wochenschrift*, Nos. 11 and 12, 1890.)—BRIEGER and FRAENKEL describe their investigations of the question whether pathogenic bacteria work their mischief by the intervention of chemical poisons which they may originate during their growth and development. Of course, the first condition for successful inquiry was to employ pure cultivations of the organisms experimented upon. Basic bodies, denominated "toxine," had already been found in several pathogenic microörganisms, such as the bacillus of typhoid, tetanus, cholera, etc. Yet it was found that this toxine did not invariably call forth all the phenomena of the infectious diseases due to the bacilli, from pure cultivations of which it had been obtained; the supposition, therefore, seems fair that, besides the already found chemical bodies, there were other substances which played a momentous part.

Brieger and Fraenkel considered that Löffler's bacillus of diphtheria was well adapted for their purpose, because it is now beyond doubt that this organism is the genuine cause of diphtheria.

Löffler had already called attention to the fact that this bacillus, when inoculated on animals, guinea-pigs and pigeons, colonized only the immediate neighborhood of the infected spot, yet grave alterations of texture and organs, and speedy death of the animals experimented on followed.

This connection of events could only be ex-

plained in this way—that the bacilli produced, by their local multiplication, a substance of exceedingly poisonous properties, which spread over the whole organism and, independently of the bacteria, did its deadly work.

Brieger and Fraenkel consider that they have proved that Löffler's diphtheria bacillus engenders in its pure cultivation a poisonous, soluble substance separable from the bacteria, and which, when injected into susceptible animals, calls forth the same phenomena as the injection of the living microörganism. The authors also have settled that this substance is destroyed by a heat of 60° C. (140° F.); that it can stand a heat of 50° C., even in presence of excess of muriatic acid. This last fact itself speaks against the supposition that the poison of the diphtheria bacillus is a ferment or an enzym.

Further examination of this substance showed it was not a ptomaine or toxine; no crystalline substance, save kreatinin and cholin, was obtained. Shortly summing up their investigations, the authors seem to have discovered in the diphtheria bacillus a substance belonging to the albumen series of bodies, which has poisonous properties, and causes the phenomena of diphtheria when injected. They propose to give it the name of "toxalbumine." In the living body, they consider that the bacteria build up and separate their toxalbumine from the albumen of the tissues.

Brieger and Fraenkel also examined typhoid, tetanus, and cholera bacteria, and staphylococcus aureus and watery extracts of the internal organs of animals killed by anthrax, in the same way as they had examined the diphtheria bacillus, and found in all of them bodies which, according to their chemical behavior, were albuminoids, were poisonous, and could therefore be aptly called toxalbumines.

The road from normal constituents of the body to substances of the most dangerous kind seems a very short one, and our organism itself may be looked upon as the proximate cause of morbid conditions, let loose by the life-activity of bacteria.—*Edinburgh Med. Journal.*

CAFFEIN IN ADYNAMIC CONDITIONS.—PROF. HUCHARD, before the Société Médicale des Hôpitaux, described the excellent results obtained by the hypodermatic use of this drug in a severe case of measles, attended by ataxic adynamia. He is of the opinion that the drug is indicated in all adynamic conditions. As early as 1871, he pointed out that caffein has much the same effect on the heart muscle as an electric current upon paralyzed muscles. In general, the dose of the drug has been too small; 4 grs., and in very severe cases as high as 15 grs. Lépine, in 1882, stated that much larger doses might be given, and in cases of asystole he gave from 30 to 45 grs. daily, without unpleasant consequences. The drug has not only a diuretic effect, but it is a heart tonic as well.

In the discussion, Desnos remarked that hypodermatic injections of caffein frequently caused pain and abscess. Huchard said that these results could be avoided if the injections were made deeply, between the muscles; in the eight years that he had employed the drug, he had only seen two or three abscesses, and they healed readily.

TREATMENT OF GRAVE ANÆMIA BY SUBCUTANEOUS INJECTIONS OF IODIUM CHLORIDE.—DR. ST. HUZARSKI (*Centralblatt für Gynäkologie*) describes an interesting case of severe anæmia following a tedious but not difficult labor. The uterus contracted well, but shortly after labor was ended, it relaxed and a moderate hæmorrhage took place. The patient presented alarming symptoms, was restless, with weak pulse, and complained of great prostration. Hypodermatics of ether and camphor were given, which produced only temporary relief. The patient soon relapsing into a condition where death seemed imminent. In this emergency a large rectal injection of solution of common salt, which immediately improved all the symptoms, the pulse became stronger, the color returned to the lips. One hour later he was again called and found the patient in extremes. A subcutaneous injection of 1,000 grams of a 6 per cent. solution of sodium chloride was given. This injection was immediately followed by improvement in all the symptoms and the patient went on to slow convalescence.

OREXIN.—DR. GEORGE MILLER has recently (*Therapeutische Monatshefte*, June, 1890), added his experience in the use of this new stomachic. In five cases in which it was given not the slightest improvement in the appetite was noticed. The drug was given in from 3 to 7 gr. doses daily, to patients suffering from various conditions—intestinal tuberculosis, diarrhœa, phthisis, vomiting and diabetes, in which a persistent loss of appetite was noted. While five cases is but a limited number from which to draw conclusions, yet it can hardly be said that this much lauded drug is a specific.

SALICYLATE OF SODIUM IN PRURITUS.—DR. WERTHEIMER reports the case of a woman suffering from universal cutaneous pruritus of nervous origin, for the relief of which he tried salicylate of sodium in fifteen-grain doses three times a day. After the third dose she enjoyed the first night's undisturbed sleep she had had for a long time, and by the fourth day all itching had entirely ceased. Smaller doses were given for a few days longer, and she has since remained free from any return of the pruritus.

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SATURDAY, AUGUST 16, 1890.

CREASOTE IN THE TREATMENT OF PHTHISIS.

The treatment of phthisis still leaves much to be desired, and notwithstanding the notable advances of the last few years, a recent writer says that the progress in this disease has an intimate relation with the size of the purse. This is only another way of stating that the various methods so far devised are adapted only for people in comfortable circumstances. While the remark above quoted was made with especial reference to the climatic treatment of pulmonary tuberculosis, the same is true of measures recently devised. The pneumatic cabinet, Weigart's hot air method, the inhalation of nitrate of silver, as well as other modifications of these forms, all presuppose expensive mechanical appliances or the services of trained attendants, that can only be secured by the comparatively wealthy, or in the wards of our larger hospitals.

A cheap and simple remedy, easy of application, that will take the place of the routine and sufficient cod-liver oil and tonic prescriptions, in our large ambulatory clinics, is a desideratum; whether it has been found in creasote, remains to be seen, but there is certainly sufficient evidence now at hand to justify a more extended trial of the drug than it has yet received.

It is nearly ten years since GUMBERT and BOUCHARD published their experience with the drug, and in that time many contributions have appeared in medical literature. The most important of these, that of SUMMERBRODT (quoted by the *Med. Chir. Rundschau*) who reports 5,000 cases treated, during the past nine years, by increasing doses of creasote.

According to some writers the dose heretofore employed, has been too small. BEGDUORITCH (*Meditzinskoe Obozreuïë*), himself a sufferer from phthisis, took in four months four ounces and two drachms of creasote. The drug was exhibited by the stomach in capsules, freshly prepared, just before using. Unpleasant symptoms were noticed only when from 12 to 20 minims were taken in an hour, when he suffered from giddiness, cardiac palpitation, small pulse, and general weakness, with pallor and anxiety. The results in his case was some diminition of dulness and a cessation of the crepitant râle. The number of the tubercle bacilli remained about the same. DR. SCHETELIG (*Pharmaceutische Post*) claimed that the drug was free from irritating properties, and that it could be given in 15 to 25 minims daily, for months at a time.

In 1889, DR. BOURGET described his "intensive" method of treating phthisis (*Traitement intensif de la tuberculose par le guayacol et la creasote de hêtre, Corr.-Bl. f. Schweiz. Aerzte*) which consisted essentially in the administration of guaiacol internally, in wine or cod-liver oil, and the inhalation of creasote, together with inunctions of creasote dissolved in cod-liver oil. In this way comparatively large quantities of the drug were rapidly introduced into the system.

Two later writers who claim signal success with creasote, both used the drug hypodermatically. LÉPINE (*La Semaine Médicale*, June 25, '90) recommends the injection of creasote dissolved in oil, into the cellular tissue. The quantity that may be used in this way far exceeds that which is tolerated by the stomach. DR. COLLARD, of the Hôpital des Anglais, (*Gazette Med. de Liege*) has also used the hypodermatic method with excellent results. The most of his patients were well advanced in the disease, frequently presenting marked infiltration with the formation of cavities. One patient received in forty days, seventeen ounces of cod-liver oil containing 540 grains of creasote. The drug was carefully incorporated with the oil, which had been previously sterilized. Occasionally the oil would reappear at the point of injection; one patient who had been for a little time out of the hospital, was readmitted to the surgical wards for one of these accumulations in the lumbo-dorsal region; it was

opened and a considerable quantity of oil evacuated, together with some pus.

Dr. Collard observed an improvement in all the patients treated, the night sweats disappeared, cough lessened, and the bronchial secretion decreased. One peculiar effect noted was the great prostration with fall of temperature that frequently followed the injections. This was experimentally found to be due to the excessive quantity of oil employed, as the same phenomena were noted when the oil alone was used. He also determined that the oil of sweet almonds, and olive oil, were readily absorbed by the cellular tissue, which was not true of cod-liver oil. Therefore he recommends that only olive oil or oil of sweet almonds be used, and that they be reduced to the smallest quantity: one to ten—or perhaps even one to five. No great pain was caused by the injections, particularly if they were made into the deep cellular tissue, and no disturbance of the bowels, digestion or circulation, was observed.

DR. AUSTIN FLINT (*N. Y. Med. Jour.*), and DR. BEVERLY ROBINSON (*Amer. Jour. Med. Sci.*), have used creasote and found it to have considerable value. Dr. Robinson recommends the administration with whisky and glycerine in the proportions of six minims of creasote to two ounces of the former, and one of the latter.

An interesting speculation is as to the possible action of creasote. Most writers agree that it has no direct action upon the bacilli (Cornet, *Ztschr. f. Hyg.*, Collard and others). While these writers could not determine that the bacilli were lessened, it is to be remembered that our present methods of estimating bacilli in sputum are so imperfect, that these statements may be taken with some allowance. While creasote does not directly kill the bacilli, it may so lessen the secretions, or alter the mucous membranes of the respiratory tract, that their development is hindered. The probability of this explanation is heightened by the fact that creasote is excreted largely by the lungs, and the odor of the drug can be detected in the breath shortly after its administration.

To sum up the recent literature we are justified in saying that much is to be expected from the use of creasote in all stages of consumption. When advanced so far that cavities have formed a cure can hardly be looked for, but even in these cases a marked improvement in the more distressing symptoms may be expected. The drug is preferably administered hypodermatically, dissolved in oil of sweet almonds in the proportion of one to ten. The daily dose is from three to fifteen minims. Pure beech-wood creasote should be used, to the exclusion of the cheaper commercial varieties.

ELECTRICAL EXECUTION.

At last the first criminal execution by means of electricity is an accomplished fact, and KEMMLER, the brutal murderer, is dead. We do not protest against execution of the death penalty as the extreme expression of the law against so foul a crime, but in the name of all that is human, we do protest against a possible recurrence of such a procedure as this—not as to the method, but as to its manner. Let the majesty of the law be manifest by the dignity and surety of its action, but never again let the suspension of the fixed fact become the instrument of criminal torture by prolonging on the part of the victim a suspense, far worse than death itself. And if for wise reasons the laws decree that executions shall be conducted privately, then why permit the horrible delineation of their utmost details with gusto and with talent on the part of the press, worthy of a better cause. If pandering to the basest of human passions, reporters are to run riot in their descriptions of such scenes, then unbar the gates and give to the masses an equal chance and a fair show, even though the revenue of the public press be cut off.

As to the use of electricity in the execution of criminals, we believe the decision of the courts to be wise and in the interest of humanity. The studied effort on the part of reporters to produce a blood-curdling sensation will doubtless exert a more or less prejudicial influence upon the public mind; but, had the same talent been employed to depict the horrors of the gibbet the outcry against hanging would be even more emphatic. The application of the electrical current is as surely instant and as certain as is the fatal drop, and once the plan adopted we believe that death by electricity will seem a far more reasonable procedure than that which permits the dangling of a struggling body for an uncertain period between the heavens and the earth, as though it were unclaimed by either. The English press,

true to its traditions, and ever at war with innovations, is unmeasured in its condemnation of this method.

The London *Standard* says: "The scene can be described as a disgrace to humanity. It will send a thrill of indignation throughout the civilized world. We cannot believe that Americans will allow the electrical execution act to stand."

The London *Chronicle*, commenting upon the killing of Kemmler by electricity, says the scene was worthy of the darkest chambers of the Inquisition in the sixteenth century.

The *Times* says it would be impossible to imagine a more revolting exhibition. It advocates a lethal chamber in preference to the use of electricity.

With reference to these extravagant expressions we can only say, that familiarity with the working of the gibbet must have rendered it less repulsive to English eyes than to ours, but whether death in the mid-heavens be preferable to death in an easy-chair, is hardly a question for such prejudiced minds to pass upon. The suggestion so often made and now referred to, of a lethal chamber as best ensuring a painless death, will doubtless be most carefully considered in its time, and as the world moves on, anæsthesia and electricity each will have its vigorous advocates, *but* as to the old time gibbet—that relic of the darkest age—we confidently believe it has had its day, and that having served its purpose—*it must go!*

BOARDS OF HEALTH AND LEPROSY.

The recent recognition in New York of a case of leprosy in a young Spanish-American, pursuing his studies in that city for about a year, was the occasion of a most remarkable example of officialism on the part of the Board of Health of that city. With no consideration of the facts that there were no objections to the boy residing with his family, and that their pecuniary circumstances were such as to permit the employment of excellent physicians, the unfortunate patient was forcibly removed to a quarantine hospital, isolated, and considerable newspaper notoriety given the case. It might have been supposed that the experience of this Board in the case of suspected yellow fever in the late RICHARD PROCTOR, wherein his forcible removal from his hotel, in rainy weather, dissipated any chance of recovery, would have taught the lesson of *festina lentè*. Not that any fatal result will possibly ensue in this case, but because there is not a scintilla of evidence that the contagious character of leprosy justifies such treatment, more than that gonorrhœa, syphilis, tuberculosis, typhoid fever, or the exanthemata, should be similarly dealt with.

Only once or twice has official zeal, in any of our States, manifested itself in such a manner. And that it is not the common opinion of the representatives of our State and local boards of health that lepers should be isolated in this country, is demonstrated by the refusal of the conference of those bodies held in Nashville, just preceding the meeting of the Association, to pass a resolution demanding such treatment of these unfortunates. In fact, such a resolution would have been a virtual condemnation of the efficient boards of health in South Carolina, Florida, Louisiana, Minnesota and California, that have carefully considered the question, on account of the greater numerical existence of cases of leprosy than in any other State. And in most of these States, the disease affects aliens solely; though occasionally isolated cases of leprosy have occurred in individuals that have never been out of a limited district in which leprosy was unknown.

If leprosy was even moderately contagious in the United States, it would certainly be much more prevalent than now, for it has existed here more than a hundred years. We know of families in this country in which a mother, perhaps a daughter or a son, were lepers, and yet the other members have remained free from the disease to a ripe old age. Would it have been justifiable to separate the diseased from the healthy, depriving the latter of the enjoyment — melancholy though it be—of caring for those dear to them during the many years the disease may take to run its course?

Considering the divided opinion of authoritative dermatologists regarding the contagious character of the disease at all; and disbelieving that the experience of certain tropical countries, in which poor food, lack of clothing and shelter, and deficient stamina, are inciting causes of leprosy, will find a parallel in the infinitely more sanitarily situated population of the United States, we would, in the name of rational medicine, bespeak a more considerate action in the treatment of lepers, than that which recently governed the New York Board of Health.

EDITORIAL NOTES.

INTERNATIONAL MEDICAL CONGRESS.—The Tenth International Medical Congress opened in Berlin, Aug. 4. Herr von Boetticher, Chief of the Imperial Home Office and representative of the Chancellor; Herr von Maltzahn, Imperial Treasurer; Dr. von Gossler, Prussian Minister of Ecclesiastical Affairs, Instruction and Medicinal Affairs, and Herr Herrfurth, Prussian Minister of the Interior, represented the German Government at the opening ceremony. Prof. Virchow, President of the Congress, made the opening address. He expressed the Emperor's sympathy with the objects of the Congress, and said that Germany would devote herself to science and humane efforts.

Two thousand five hundred German and 2,500 foreign doctors, including 500 physicians from America, were present. Herr v. Boetticher made an address welcoming the delegates on behalf of the German States, and Dr. von Gossler welcomed them on behalf of the Educational Department. An address welcoming the delegates to Berlin was made by the burgomaster of the city.

Dr. Hamilton, Surgeon-General of the United States Marine-Hospital Service, who was Secretary of the Congress held last year at Washington, and others made speeches in response to the addresses of welcome.

Among the British doctors attending the Congress were: Sir James Paget, Sir Andrew Clarke, Professor Stewart of Edinburgh, and Professor Stokes, of Dublin. Of the American physicians present at the Congress, and of the papers submitted by them, we shall speak more fully in our next issue.

An invitation had been extended to the Congress to hold its next meeting in Chicago in 1893, in connection with the World's Columbian Exposition, but Rome was selected.

Professor Virchow, President of the present Congress, read a letter from Sig. Crispi, the Italian Prime Minister, stating that he was rejoiced that Rome had been selected as the place for the next meeting, and welcoming the medical profession to the hospitalities of Italy.

The festivities attending the Congress have formed a prominent feature. There has been a constant succession of banquets, balls, and receptions. At the opening banquet, at which Prince Theodore, of Bavaria, and Ministers Gossler and Boetticher were present, Dr. Lyden proposed the health of Minister Phelps, who, in his response, pointed to the presence of 623 Americans as most eloquent testimony to the interest taken in the Congress by the medical profession in America.

Mr. Phelps marked the close of the Congress with a dinner given to Surgeon-General Hamilton and other army and navy officials. Among the guests were Baron von Bunsen, Gen. Wilson, Col. F. Jones, Dr. Jacobi, Prof. Lusk, and Capt. Bingham.

Prof. Virchow, in his closing address, noticed the fact that the Congress had brought together the greatest number of scientists ever congregated. The proceedings, he said, had been in every way worthy of the medical science and had been characterized by brotherly regard. Dr. Billings, of Washington, expressed the thanks of the members to the organizers of the Congress.

On the third day there had been not less than 7,000 cards of membership issued. Of this number, there were 623 American names enrolled, 421 were Russian, 353 were British, and 173 were French. The "boycott" by the French, which was first asserted and then denied, proves to have been very nearly successful—a fact that is regretable by the medical world at large. According to some of the press cablegrams, there can be little doubt that the hotel accommodations, and some other of the arrangements of the Local Committee, have been overstrained, but the indications are that the scientific proceedings have been almost unexpectedly interesting and instructive, and in all of which American contributors have not been behindhand.

A MUNIFICENT BEQUEST TO THE MEDICAL COLLEGE OF INDIANA.—Dr. William Lomax, an aged and wealthy physician of Marion, this State, has given his estate, valued at $100,000, to the Medical College of Indiana. He at first desired to present the money to the college through Depaw University at Greencastle, thus benefiting both institutions, but making the Medical College a department of the university. In this desire he failed, and in consequence now donates his estate outright to the college. It was found, when it came to arranging the preliminaries, that various obstacles stood in the way of the acceptance of the gift by the college as it was constituted, and in order to facilitate matters and

make everything satisfactory to donor and recipient it was determined to reorganize the institution. The necessary changes have been effected, the members having among their number Governor Hovey and the Hon. William H. English.

THE PLAGUE.—This disease has again appeared in malignant form in the little village of Kalé-Daraéphan, in Persia. The inhabitants number 280, and up to June 14, forty-two cases were reported, of which twenty-six were fatal. The characteristics of the disease of special note were, engorgement of axillary and inguinal glands, subnormal temperature, 40°; anthrax, and bluish eruption of the skin. In Spain the disease is at a stand, there being few reports of new cases. The Commission appointed by the Spanish Government to investigate the disease, have pronounced it true Asiatic cholera. Rigid inspection is ordered by the French Government of all travelers arriving on its frontiers from Algiers or Spain, and reports of such arrivals in Paris are at once reported to the prefect of police.

DUSTERS AND DISEASE.—A circular of information has been prepared by Dr. Benjamin Lee, Secretary of the State Board of Health of Pennsylvania, on the precautions to be taken by the patient and others against consumption. In addition to the usual counsel given in such circulars, the feather duster finds prominent mention as follows:

> The duster, and especially that potent distributor of germs, the feather duster, should never be used in the room habitually occupied by a consumptive. The floor, wood work, and furniture should be wiped with a damp cloth. The patient's clothing should be kept by itself, and thoroughly boiled when washed. It need hardly be said that the room should be ventilated as thoroughly as is consistent with the maintenance of a proper temperature.

The feather duster is probably the least sanitary of all the so-called cleansing utensils to be found in our homes. In the sick-room it is little better than an abomination.

UNIVERSITY OF THE CITY OF NEW YORK.—The University this year commemorates its fiftieth anniversary. Its Dispensary and Laboratory buildings, recently erected, will add materially to its facilities for teaching. We especially note the requirement of an entrance examination, on the part of those who do not possess an academic or scientific degree, as a condition to graduation. Thus, one by one, the colleges are following the good example which was set by other medical schools which we could name, a good while ago. During the fifty years, 5,832 students have received the degree of M.D. from this institution.

A FEMALE DENTAL SURGEON.—Miss Anne F. Reynolds, D.D.S., holds the first dental degree that has been granted in Massachusetts. She graduated June 19, from the Boston Dental College. She also received the first prize for senior honors.

DISTINCTION FOR DR. ROSSE.—Dr. Irving C. Rosse, of Washington, has lately had conferred upon him the honorable distinction of F. R. G. S. by election as fellow of the Royal Geographical Society, through the recommendation of Sir T. Fowell Buxton, Bart., and Mr. George Barclay, of the British legation. The compliment is a recognition of services as traveller and explorer, more particularly in the Siberian Arctic, where the doctor was first to scale Herald Island and to land on Wrangel Land during the search for the exploring yacht Jeannette and the missing whalers.

SENN'S work on Surgical Bacteriology has been translated into the French by Broca.

PRIZES.—The Barcelona Medical and Surgical Academy has offered a prize of 1,500 pesetas for an essay on the treatment of acute febrile processes, with especial reference to the use of antipyretics. The second best essay receives 750 pesetas.

CHOLERA IN ARABIA.—There has been an extension of cholera to Mecca during July, which cannot be regarded otherwise than a most unfavorable prognostic of the spread of the pestilence beyond Asia. The number of deaths at Mecca, in the last week in July, is reported to have averaged eighty *per diem*. All ports along the Red Sea, in the Levant and Asia Minor, have been quarantined as against the pilgrims returning from the Holy City.

CREMATION seems to be making rapid progress upon the continent. The crematories at Milan, Gotha, and London, all report an increase in the number of incinerations while that in Paris heads the list with 532. A cremation society has recently been organized in Stockholm.

TOPICS OF THE WEEK.

SOLDIER SURGEONS.

And wherefore, soldiers! to our country's shame,
Is there no record yet of Thomson's name?
No stone to mark how that devoted one
By the Red Alma, when the fray was done,
In mercy to the wounded of the o'erthrown,
Remained to do his Godlike work—alone?
Where'er he looked were marks of fire and steel,
Spent shot and shell, dismounted gun and wheel,
The broken sabre and the cloven helm—
All that could daunt the soul or overwhelm;
Corpses in heaps, the dead and staggering steed,
And groups of wounded in their direst need!
But yet the gallant Scot maintained his post,
Beside a remnant of the Russian host,
Whose wounds—such wounds! his orders were to dress,
And soothe the sufferers in their mad distress.
Foes to a man—right pleasant patients they—
Eight hundred Calmucks who had lost the day;
But down he knelt beneath the lowering heaven,
And, in pursuance of the order given,
Went to his duty with a manly heart,
Soldier and surgeon, true to either part.
With only one attendant who could speak
His country's tongue, amid increasing shriek
And groan, and wail, and cry, woful to hear—
The raven and the vulture hovering near—
There, unappalled by all these sounds and sights,
Nobly he toiled two fearful days and nights.
Limb after limb examined and bound up,
And poured the cordial balsam in the cup,
Desisting only when himself struck down,
The unconscious winner of a world's renown.
No better they who, battle blade in hand,
Support the martial glories of their land,
Than he who, by no stirring passions warmed,
Flings down his sword when all beside are armed,
And while the bullets whistle round his head,
In field, or trench, perchance his gory bed,
Soothes and sustains his comrades under fire
With a devotion no neglect can tire.
Neglect! by Heavens! they were a sorry crew
Could well forget the deeds such heroes do!
The lives they save, the courage men reveal
Who rush on death, confiding in their zeal.
Which most a nation's gratitude deserve—
Those who in peril's hour show skill and nerve,
Or they, the brainless chiefs, whoe'er they be,
Who could not make between their camp and sea,
The two ends of a wretched roadway meet,
That starving thousands and their steeds might eat,
Though food for both, on Balaclava's shore,
Rotted in heaps within their cannon's roar?
Neglect! Up, every man now sound and whole,
Whose wounds were salved before Sebastopol—
Up, all whom ill-paid Science rescued thence
From desolating plague and pestilence;
And one and all, in your preserver's case,
Call on a thankless Government to place
Honors on breasts as yet unjustly bare!
Were these the men that lost an army there?
In siege or battle, under any sun,
Our soldier surgeons yield the palm to none!

—SURGEON-MAJOR, *Brit. Med. Journal.*

DRUG ADULTERATION.

The New York State Analyst has, during the past year, examined 417 samples of pharmacopœial drugs, purchased from twenty different druggists, and 115 samples of cream of tartar procured from grocers. Of the totality of 532 samples 43.8 per cent. were found of good quality, 10.2 per cent. fair, 24.4 inferior, 6.2 per cent. not as called for, 4.5 excessive, and 10.9 per cent. entirely fictitious. Of the samples of cream of tartar thirty were genuine, twenty-seven were adulterated, and fifty-eight fictitious. The state analysts are doing a great work, so are the committees on adulteration of the state pharmaceutical associations, but their disclosures of these frauds will come to naught unless prosecution and punishment are meted out to those guilty of these dishonest practices. Adulteration and substitution, harmless or harmful, are crimes. There is no gradation from right to wrong, the line of separation is sharply drawn, and he who deliberately sophisticates an article, he who sells it, and he who consents to its sale, without protesting, are alike guilty. These are plain words, but they are true. Nor is ignorance a valid excuse. The druggist who whines that he did not know his wares were below standard cannot therefore be absolved from fault. It is his business to know, and he is culpable, if he does not test his drugs and sell them on their merits. Dishonesty is bad enough in any line of trade, but when it touches the traffic in food and medicine, it is specially abhorrent.

It is seldom that adulteration is practiced from any other motive than that of a desire for pecuniary gain. Were it possible to eliminate from the make-up of mankind the "love of money which is the root of all evil," the millenium would be at hand. Why does the manufacturer produce, the jobber handle, the retailer buy and dispense, an inferior or fraudulent article? Merely for a few cents additional profit. The druggist sells knowingly, an adulterated cream of tartar, and asks "Where's the harm? It injures no one." Possibly it does work no special bodily injury to the consumer, perhaps, also, no mention should be made of the additional damage to the dealer's already badly blunted moral sense, but if the fraud be discovered the pecuniary damage would be such as to show him that there is harm. The argument of financial loss is the only one that appeals with much force and weight to this variety of druggist.

Much, not all, of the prevalent adulteration is effected by the first handler or producer, but it takes two to make a bargain, and it is necessary that he find a market for his goods. If retailers would not handle adulterated or inferior drugs, the wholesalers and manufacturers would not offer them. It is useless to attempt the reform of the wilfully dishonest druggist. It is from the large majority of honest intentioned men that the protest must come. Examine, test, prove your drugs, force the dealers to furnish honest articles, and sell nothing under misrepresentation. Do right for right's sake, frown upon dishonesty because it is evil, especially that dishonesty whose existence depends primarily on monetary gain.—*Pharmaceutical Era.*

MEDICAL CONGRESS IN JAPAN.

It was inevitable that the Japanese who have shown so remarkable a power of assimilating the details of Western civilization should before long hold a Medical Congress. Accordingly, the first gathering of the kind in Japan was held at Tokyo, from April 1st to the 7th. In spite of the

somewhat inauspicious day chosen for the opening, the meeting was a great success, though only two foreign doctors were present; as there are nearly forty non-Japanese practitioners at Tokyo and Yokohama, some disappointment was felt that more of them did not grace the assembly with their presence. It is hinted, however, that the Invitation committee was chiefly responsible for the absence of the foreign element. The proceedings were of the usual kind: addresses on various more or less interesting subjects being delivered, cases and inventions, new and old, exhibited, etc. Complaint is made in some quarters that the scientific communications were not sufficiently inspired by the *genius loci*, little or nothing of special interest to the Japanese people being contained in them. As compared with other congresses, festivities seem to have been few and far between, though we are told that on the last day there was a "general social gathering in Shiba Park, at which there was an ample provision for refreshment."

HOW RESPECT FOR SCIENCE IS ENFORCED IN RUSSIA.

Le Journal de Médecine de Paris, June 22, 1890, is responsible for the following: "A correspondent at St. Petersburg writes, 'An extraordinary affair at Odessa has come to my knowledge. There is in the city in question an Institute of Bacteriology, founded and maintained by the municipality. The director is a Dr. Bardach, a pupil of Pasteur, who superintends the vaccination of cattle against anthrax and Siberian plague, after the method of Pasteur. The Russian Imperial Government sent circulars to all the landed proprietors of the South of Russia, requiring them to have their cattle vaccinated, and the brothers Pankvatjeff, two millionaires, accordingly sent for Dr. Bardach the other day to come to their estates in order to vaccinate their cattle. Unfortunately, the doctor made some mistake in the vaccine virus, and in two days there died 3,552 sheep, 1,200 horned cattle, and some hundreds of horses. Their owners brought an action against the Bacteriological Institute, that is to say against the city of Odessa, and demanded damages. The case was tried a few days ago. The counsel for the city stigmatized the brothers Pankvatjeff as persons knowing nothing of scientific matters, and stated that he was at a loss how to characterize 'persons who dared attack the great and celebrated *savant* Pasteur.' In short, he pleaded so effectually that not only did the brothers Pankvatjeff fail to obtain a verdict, but the tribunal condemned them to pay, in common, a fine of 3,500 francs, as well as the costs of the trial, *pour leur apprendre à mieux estimer la science.*'"—*London Med. Recorder.*

VACCINATION IN INDIA.

A valuable communication on the prevalence of small-pox in Calcutta, read before the Medical Society by Dr. K. C. Bose, of that city, and reported in the *Indian Medical Gazette*, contains a great deal of most interesting information concerning the gradually awakening attitude of the people of India in regard to the prophylactic influence of vaccination. Dr. Bose declares that he has never seen small-pox occur in a revaccinated person, and he very frequently vaccinates those smitten with the disease on the second day of the fever with the most encouraging results, and vaccination during the incubative stage he considers to be, at his hands, the means of preserving very many lives. On the question of popularizing vaccination among the natives, the deputy superintendent of the process for Calcutta declares that Dr. Bose's assistance has been effectual in enabling the protection to be introduced into a good many respectable houses, the dread excited by the prevalent epidemic being used as an important agent in the conversion of the people. He firmly believes that, as its protective virtues are appreciated, vaccination will grow in favor and become general bye-and-bye.—*London Med. Recorder.*

RELICS OF BARBARISM IN THE GERMAN UNIVERSITIES.

With all their learning and teaching power, the German universities retain some rather unlovely traditions, of which duelling is perhaps the most redolent of barbarism. True, the vast majority of "hostile meetings" between undergraduates seldom result in more than facial disfigurement; but sometimes, when firearms are the weapons chosen instead of swords, danger is inevitable, and even death may occur. A melancholy illustration of this has lately been witnessed at Wurzburg, where a highly promising and amiable "candidatus medicus" lost his life. Paul Fleurer, the unfortunate youth in question, seems to have played a truly chivalrous part in the encounter; for after a first, and then a second, interchange of shots, he held out his hand twice in token of reconciliation with his antagonist, but in vain. A third interchange was insisted on, and poor Fleurer fell mortally wounded, and died in a few minutes. At his funeral, which was attended by the students in large numbers, and with all the insignia of mourning, *oraisons funèbres* were delivered, the principal of which referred to the deceased as the victim of an "unfortunately still prevailing prejudice"—surely an inadequate condemnation of a practice which finds no favor in the better-mannered academic life of Great Britain and America.—*The Lancet.*

LIBERALITY OF A CONTINENTAL SURGEON.

Examples of liberality in medical men are never very far to seek, though it is, of course, but rarely that members of our profession are sufficiently wealthy to make gifts of large sums for the public good. An excellent example of what some of the more fortunate of our continental brethren are able at times to do in this respect has recently occurred. Prof. Sklifasovski, the eminent Moscow surgeon, having performed two operations on wealthy patients in Odessa, received from one of them about 200 guineas, and from the other a still more substantial fee, amounting to more than £1,200. The University of Odessa has not possessed a complete medical faculty, but this is now being created, and Professor Sklifasovski has presented the whole of the larger fee to the new faculty, for the purpose of endowing a scholarship for poor students.

PRACTICAL NOTES.

CHRISTOPHER ON SUMMER COMPLAINT.

The true pathology of this disease, or group of diseases, is by no means settled. Dr. Christopher discusses the subject in an interesting paper. He points out that the pathology of the disease comprises three divisions: (*a*) its morbid anatomy; (*b*) its bacteriology; (*c*) its chemistry. It has become the custom to discuss this disease, from one or other standpoint, according to the fancy of the writer, and with little or no reference to the other divisions of the subject. A case of summer complaint presents symptoms on the part of the bowels, on the part of the circulation, of the respiration, the kidneys, the skin, and the great nervous centres. The bowel symptoms are usually the most prominent. The odor of the stool is a most important feature; practically, it is always offensive, and in a great proportion of cases can be described as either sour or putrid. Every such stool is a fermenting mass, and the odor enables us to recognize two great classes of fermentations, one giving rise to *acid* smelling stools, the other to *putrid* stools. A putrid stool means fermentation of albuminous or colloidus material. Nitrogenous tissue is necessary for putrefaction. An acid stool, on the other hand, has its origin in the carbohydrates, and fats of the food. It is true that proteids contain a carbohydrate nucleus, and in decomposition may give rise to carbohydrates, or fatty acids, but the amounts so set free are merely nominal. The anatomical lesions in summer complaint are utterly inadequate to explain the symptoms, especially in acute cases. The best proof of the subordinate position held by lesions is the fact that the severest cases, those which terminate fatally within four days, have no lesions at all. They are to be regarded as the results of fermentation, and are more marked in proportion to the duration of the disease. They assist in prolonging the disease, and in all probability act by providing a habitat for the microörganisms. The etiological importance of hot weather in the production of the diseases has been demonstrated beyond question. Improper feeding and overcrowding must be classed as factors in the production of the complaint. The diet during the attack should be determined by the conditions within the bowels, as shown by the stools. In putrid fermentations, carbohydrates should constitute the food. If a case of recent putrid intestinal fermentation be limited to a non-albuminous diet, the putridity will cease in twenty-four to forty-eight hours. In a case which has acid stools from the beginning, the food should be albuminous, that is white of egg. Here trouble is liable to arise from the starting of a putrid fermentation by the albumen. Ordinarily, however, the disease can be checked before any such trouble arises. Milk, containing, as it does, both proteids and carbohydrates, should be prohibited in all forms of intestinal fermentation. Nursing babies, with severe summer complaint, should be taken from the breast. All food administered, of whatever type, should be aseptic. In addition to regulating the diet on the foregoing principles, the treatment should include laxatives and intestinal antiseptics. Opium is contraindicated, except in persistent acid fermentation, which threatens to produce anatomical lesions.—*London Medical Recorder.*

GLUCK ON THE PREVENTION OF THE TOXIC EFFECT OF COCAINE.

In eye and ear practice Dr. Gluck has found the toxic effect of cocaine, especially in adults of middle life, a great drawback to its use. Another inconvenience is that simple solutions of cocaine do not remain stable. After twenty-four hours a solution begins to lose its anæsthetic properties, and in a few days he finds that it becomes useless. After a series of experiments the author has found that by combining phenol with cocaine the objectionable features are removed. For over a year he has used a solution made according to the following formula, since which he has not observed any toxic effects of the drug: ℞. phenol, gtt. ij; aqua destillata, ʒj; shake until solution is perfect, then add cocaine hydrochlorate, gr. x. The advantages Dr. Gluck claims for this combination of cocaine and phenol are: toxic effects prevented; anæsthetic effect increased; absence of congestive reaction; decomposition of the solution prevented; and, lastly, solution rendered aseptic.—*London Medical Recorder.*

DRESSINGS FOR FRACTURES.

Dr. Treuthardt, of Lausanne, has lately described a method for treating simple fractures, practiced by him with uniform success during the last twelve months. It consists in immobilizing the fragments by means of a sufficient quantity of cotton-wool with several thin, narrow and flexible splints, the whole being fixed by a flannel roller or handkerchiefs. The dressing is removed in two or three weeks, according to the severity of the injury. The chief advantages claimed for the plan are these: owing to its elasticity and compressive action, the dressing reduces effusion to a minimum, while leaving the circulation quite free. Hence the fragments, not being bathed in serosanguinolent effusion, unite much more rapidly than under ordinary dressings. Moreover, while fixing the fracture as effectually as an absolutely immovable apparatus, the dressing never causes any cutaneous lesions, and allows easy inspection of the injured limb.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

Stated Meeting, June 25, 1890.

DR. EDWARD JACKSON read a paper on

THE RECOGNITION OF EYE-STRAIN BY THE GENERAL PRACTITIONER.

The attempt to give relief from the symptoms of eye-strain by a careful trial, seriatim, of one's favorite sedative, tonic, and alterative prescriptions, followed by experimentation with the formulæ of great professors found floating on the surface of medical journalism, does not usually bring much comfort to the patient or credit to the doctor. And that it is so frequently persisted in until the patient deserts his so-called medical adviser, and of his own notion takes his chances with the specialist or the charlatan, seems to argue an inability to recognize the connection of this group of symptoms with their cause. The worst evil of specialism is ignorance and indifference as to other departments of medicine; one of the most aggravated manifestations of this evil is the expressed indifference of so-called "general practitioners" toward the anomalies and diseases of the eye.

From time to time efforts have been made by ophthalmologists to secure a more general recognition of eye-strain on the part of the mass of the profession; but usually these efforts consisted in a recommendation of some special instrument or procedure of diagnosis, as the refraction ophthalmoscope, or the shadow-test, or a set of trial lenses, reduced in size and price to the supposed needs of the mass of the profession. If it were really necessary to apply such special means of diagnosis in order to recognize the presence of eye-strain, there would be little prospect of its early general recognition. But it is frequently recognized by the patient himself, and the ophthalmic surgeon finds in the general rational symptoms quite sufficient grounds for a provisional diagnosis; and if the mind is clear from preconceived hypotheses as to the causes of the symptoms, tending to divert attention from their real origin, there is no reason why any one respectably qualified for general practice of medicine should not be able to make a provisional diagnosis with sufficient certainty to serve for the basis of further investigation and treatment, in the great majority of cases, without resort to any special method of examination whatever. Of course, the ophthalmoscopic evidence of ametropia, when it can be obtained, is very valuable as confirming such a diagnosis; and I do not underestimate the value of the ophthalmoscope to the general practitioner, for I cannot regard any one who is unable to use the ophthalmoscope as properly qualified for general practice. But I do say that inability to measure refraction with the ophthalmoscope is no reason for failing to recognize eye-strain.

The patient suffering from eye-strain comes with a certain history and certain complaints, which, carefully considered by the light of a very moderate knowledge of the subject, clearly indicate the cause of the trouble, in the great majority of cases. The symptoms in question may be considered separately.

Impairment of vision, either quite temporary, more prolonged, or quite permanent. A very characteristic form of temporary impairment of vision is that due to sudden relaxation of the accommodation. This occurs when the ciliary muscle has long been overtaxed, and especially in the latter hours of the day, when it is nearly tired out. The patient notices that the print or other near object on which the attention is fixed suddenly becomes entirely blurred, compelling the cessation of the eye-work. After a moment, however, the power of again focussing the object returns, and work can be resumed. The patient is apt to close his eyes for an instant, and, perhaps, rub them, and on again opening finds the sight again restored. If the eye-work is continued, the failure of accommodation recurs, to again rapidly pass away; and keeping on with the eye-work, these periods of inability to see become more and more frequent, until, finally, they greatly interfere with the continuance of the work, or quite prevent it. This form of impairment affects only the vision for near work.

Another temporary impairment is that due to spasm of the accommodation; it affects distant vision only, and is noticed chiefly by those whose distant vision is otherwise pretty good. It comes on after prolonged straining of the eye, usually for near vision, and lasts until the eye has gotten well rested. It is a valuable danger signal, and should secure cessation from the work causing it until it has given place to normal relaxation. Permanent impairment of vision is brought about when eye-strain causes myopia or decided permanent damage of the choroid and retina.

Headache and aching of the eyes—Eye-strain should be the first thought suggested by any complaint of headache, for in our day and civilization it is by far the most common cause of that symptom. It enters as a factor into the causation of nearly all headaches not due to pyrexia, toxemia, or diseases of the brain or its membranes. The simple existence of headache, therefore, should suggest eye-strain; but frequently a a careful inquiry as to the manner and time of occurrence of the attack, and the location of the severest pain, will be almost conclusive as to the origin of the trouble.

Often it comes on whenever the eyes are used, and is absent when they have had a proper period of rest. The occasions of most severe re-

quirement in the direction of eye-work are the doing of anything requiring accurate near vision, taxing both the accommodation and the convergence; or traveling, shopping, attendance at public gatherings, which entail more use of the eyes than the patient is at the time conscious of, and often under unfavorable conditions.

Very often the chronological connection between the use of the eye and the occurrence of the ache, although perfectly certain and evident when once it has been observed, has never been noted by the patient until his attention has been directly called to it. Even when the headache seems constant and quite uninfluenced by variations in the amount of eye-work, it may be due wholly to eye-strain.

In hyperopia in young people the accommodation is in excessive use so long as the eyes are open and the attention fixed on any visible object; and hyperopia is the most common cause of constant headache. The writer was formerly subject to a constant headache whenever confined to the house, and regarded it as caused by breathing vitiated air, until it was quite cured by the correction of his hyperopic astigmatism. Many persons have the same idea as to the causation of the headaches they always experience when attending the theatre or other place of public amusement, and which are really due to eye-strain. Others ascribe these headaches, and those experienced in traveling or shopping, to exhaustion. This is nearer the truth, only they commonly have in mind a condition of general exhaustion, whereas it is largely one of local exhaustion of the special nervous apparatus concerned in the act of seeing.

The *location of the aching* is of some significance. Generally it is frontal, often described as beginning in the eye, or just back of the eye, or through the temples. Frequently it extends to the occipital region, and may sometimes be felt principally or wholly in that region. Headache most severe in the vertex or confined to that region is probably not very common from any cause, but from eye-strain it is almost unknown. Often the headache is more severe on one side of the head than the other. Sometimes it is entirely confined to one side, but usually it is bilateral.

Those more or less regularly periodical headaches, known as nervous or sick headache, migraine, or, when confined to one side of the head, hemicrania, are in many cases set up by eye-strain and relieved by its removal. Attacks of this kind are frequently ushered in by certain interference with vision and subjective sensations of light, affecting a part or the whole of the visual field, and known as ophthalmic migraine. These visual disturbances are simply a part of the general "nerve-storm," and it is not certain that they especially indicate the origin of the attacks to have been eye-strain.

Congestion, irritability, or inflammation of the eyes and their appendages should always suggest the suspicion of eye-strain. A single attack or manifestation of this kind has no especial significance, but repeated attacks of inflammation, or prolonged congestion or irritability, are exceedingly suggestive of a continuing cause; and the most common of these is the one now under discussion. No case of chronic inflammation of the margins of the lids, or of recurring conjunctivitis, or repeated styes, has justice done to it until it has been carefully investigated for eye-strain. Persons at the period when they begin to feel the effects of loss of accommodation in presbyopia or absolute hyperopia, suffer from repeated attacks of conjunctivitis, which they commonly ascribe to "taking cold in the eye," but which are cut short by use of the appropriate lenses, and which, if unchecked, would tend to establish a chronic catarrhal condition which is a chief discomfort in the lives of many elderly people.

Of course, these conditions of ocular congestion and inflammation will be recognized by the usual symptoms of redness, swelling, and itching, smarting, or burning pain. They often require especial local treatment, and will quite often be temporarily cured by this alone; but if the underlying cause is not removed, they show a strong tendency to recur indefinitely, or until the accommodation is so far lost that the temptation to strain it is removed. It should be noted that usually headache and these local inflammatory conditions are not presented by the same case. They may coexist, but, more commonly, if one is decidedly present, the other is absent.

So far nothing has been mentioned for the diagnosis of eye-strain but the facts ascertained by questioning the patient, and from simple inspection of the eye. If, now, the physician's office contains—what every general practitioner's office should contain—a card of test-letters for accurately ascertaining the distant vision, and a card of fine print for ascertaining the near point of the eye, additional valuable evidence is easily obtainable. The trial of the distant vision will give indication of any considerable degree of myopia or astigmatism. But it must always be borne in mind that troublesome ametropia may be present without preventing perfect distant vision. The position of the near point, if farther from the patient's eye than his age would indicate, is pretty good evidence of strain of the accommodation. Evidence of strain of the external muscles of the eye, heterophoria, can be obtained by simply getting the patient to keep his eyes fixed on some object, near or distant, and covering one eye; then noting whether the covered eye deviates from its position of fixation, and especially whether it makes a quick movement to return to that position when it is uncovered.

Briefly to recapitulate, the common symptoms

of eye-strain are: Certain forms of impairment of vision.

Headache, which is to be studied with reference to the times of its occurrence and the parts of the head to which the aching is referred, with careful discrimination between the patient's facts and his theoretical explanation of them.

Chronic or repeatedly recurring congestion, or inflammation of the eye or its appendages.

And if to these symptoms are added the results of the simple tests of near and distant vision, and evidence of tendency of the eyes to deviate from their normal position when covered, a very good basis is furnished for the probable or provisional diagnosis of eye-strain, without recourse to any special apparatus or unusual diagnostic procedure. And in view of these facts there is no justification for the general practitioner who fails to recognize most of the numerous cases of eye-strain with which he is brought in contact.

DR. GEORGE M. GOULD: Certainly, nothing Dr. Jackson has advanced in his excellent paper calls forth controversy or criticism; but I think a word may be added as to certain other symptoms not alluded to by him, that may sometimes put the general practitioner on the track of an eye-strain reflex. When eye-strain is sufficiently severe to set up a reflex neurosis, sleepiness is a common symptom, brought on by persistent reading or writing. The patient cannot understand why he grows so drowsy. A more important trouble is one I at first advanced somewhat doubtfully, but now I am growing perfectly convinced is a genuine result of ametropia. I allude to troubles of appetite and digestion. Few patients with severe or long continued eye-strain that do not complain of anorexia, fickle appetite, or some dyspeptic trouble. Mothers frequently call such girls "pickers." Explain the mechanism of this reflex as we may, I am sure it is a fact, and that a malnutrition often results that may end in anæmia, and many different forms of nervous abnormality. I have had a large number of such patients regain long-lost appetite after putting on glasses, and regain ten to twenty pounds of flesh within a month or two. Nervousness and choreic movements, even genuine choreas, are traceable sometimes to the same causes. I had one patient who wore the right shoe out in a few weeks, and who had a habit of bursting out crying or into a rage at a trifle. She had been treated for chorea for years at one of our best hospitals. All symptoms have disappeared for two years, upon correction of her hyperopic astigmatism. I could cite several other cases.

I should like, also, to call attention to car-sickness in connection with eye-strain. I have had eight or nine cases of this kind, and by glasses all have been been relieved of their car-sickness. One was that of a gentleman who every journey had car-sickness. While he had the mydriatic in his eyes he went to Washington, and suffered no inconvenience whatever. Subsequently, after he had glasses, he made a trip to St. Paul without any of the former trouble. In the last two days I have had two cases—one that of a girl who could not ride a short distance in the street cars without vomiting. I found a decided degree of hypermetropic astigmatism. With the mydriatic in her eyes she rode home without her usual trouble.

A strange thing with reference to eye-strain is, that it often exists to an exceptional degree without showing any symptoms in the eye. The patient will often say that the eyes are perfectly good, and have never caused any irritation. The reflexes seem to settle in some other place. This is an interesting pathological and physiological question.

With reference to testing the eyes by the general practitioner, it has struck me that a simple plan, which could be readily carried out, would be as follows: Have two test-cards, so that the patient will not learn and remember the letters. Let him first test distant vision with one of the test-cards; then let him instil homatropine. This will give perfect paralysis in three-quarters of an hour. Then retest with the other card. Then, if vision has decreased, there is eye-strain, due to astigmatism or hypermetropia. Another practical point is that, if the patient is suffering with headache, he will be relieved by the application of the mydriatic. It is as to the existence of hyperopia and astigmatism that we want to know. Myopia rarely produces eye-strain.

DR. MARY E. ALLEN: I would ask if, in these cases, the condition of the recti muscles has not something to do with the symptoms? In my own case, I suffered eye-strain for a long time, and insufficiency of the recti muscles. I had one symptom which I have never seen described, and that is, a feeling as though a blow had been struck against the eye. My explanation of this is that, by a spasmodic contraction of the straight muscles, the elastic eyeball is suddenly drawn with force against the back of the orbit, giving the sensation of a blow. I had this a long time before wearing glasses, but very seldom since.

DR. JACKSON: My paper simply refers to the *recognition* of eye-strain. I purposely considered only those symptoms most generally present, and had in mind the great mass of cases, not the exceptional ones, which do, in the aggregate, constitute a very large number, but still are proportionately few. The other symptoms which have been mentioned, and many others, might be referred to as due to eye-strain, but they do not occur in the large number of cases, and can hardly be regarded as of general importance in making the probable diagnosis.

I have used the term eye-strain, not as a synonym of ametropia, because we may have ametropia without eye-strain, or eye-strain without ame-

tropia, if requirements are put upon the eye too great for its capacity. You can have it without any ametropia, or weakness of any extra-ocular muscle or group of muscles. It is to the question of eye-strain as isolated and separated from ametropia that I refer. Of course, in a very large proportion of cases, the relief of the eye-strain comes from correction of the ametropia.

In connection with that correction, I should like to say one thing with reference to a remark made by Dr. Gould—that is, if myopia were present, it need not be considered. In my experience, myopia may cause severe eye-strain. There is the strain of convergence, and any inequality between the two eyes in the amount of myopia—and myopia is usually unequal—is very likely to cause eye-strain. The discovery of myopia would not, to my mind, rule out the existence of eye-strain.

New York Academy of Medicine.

SECTION ON ORTHOPÆDIC SURGERY.

Stated Meeting, March 21, 1890.

V. P. GIBNEY, M.D., CHAIRMAN.

DR. JOHN RIDLON presented a case for diagnosis.

DR. GIBNEY considered it a case of cervical rotary scoliosis, with a cyst over the scapula. He had seen one or two cases of cystic tumor in this region; and the diagnosis of scoliosis was made by the position of the right shoulder, the drawing of the head to that side, and on the patient's bending forward, a deviation of the spine to the right.

DR. SAMUEL KETCH agreed in the diagnosis of rotary lateral curvature, which he thought was congenital.

DR. L. PUTZEL found some enlargement of the spine of the scapula, and muscular spasm of all the muscles inserted into the inner border of the scapula.

DR. A. B. JUDSON thought there was evident scoliosis.

DR. W. R. BIRDSALL was of the opinion that most of the deformity was the result of muscular spasm. An electrical examination ought to settle the question.

DR. A. M. PHELPS said that in a growing child, such a condition of scoliosis was often secondary to muscular spasm.

Dr. Ridlon said that he had been unable to obtain any history which would account for an irritative lesion at birth; and he had only just learned that the child had been etherized by Dr. Gerster two days ago, and that the swelling had entirely disappeared.

DR. T. HALSTED MYERS presented a case of

DOUBLE CONGENITAL MALFORMATION AT THE KNEE, WITH HYPEREXTENSION, AND TALIPES.

The patient was born at term, after an easy labor, by a breech presentation. The feet had been closely applied to the head, and the quantity of liquor amnii had been normal. The marked flexion of the thighs had been gradually overcome at the end of eight months; but at the age of 16 months, the thighs could not be extended beyond the straight position; both legs were hyperextended to 140°; there was equino-varus, marked on the left side, and moderate on the right. Neither patella could be felt. The inter-condylar grooves were shallow; the tibiæ glided forward into partial dislocation, and there was marked genu-valgum, with abnormal lateral mobility at the knee. The body was otherwise normal; and there were no evidences of cerebral defect. The muscles responded well to the Faradic current, but in a less degree on the right side. The flexors of the thigh were in constant active contraction, and the condition of the posterior leg muscles seemed to be one of structural change. The deformity had been considerably reduced in two weeks by means of a brace, which maintained flexion of the knee.

DR. MYERS presented brief notes of several cases which had been already reported by some of the members of the Section. The absence of cerebral symptoms in these cases, pointed to the cord as the seat of the lesion. The muscular spasm seemed to disappear about the third year, or even earlier; and the prognosis, as regards the usefulness of the limbs, was very good. There was nothing in these histories, however, to show that the fœtus had maintained the position found at birth. This position approximated the insertions of the anterior thigh group and the posterior leg group, which might very easily account for the structural changes in the muscles, and consequent shortening and deformity. Nor was it surprising that the patella, which was practically a part of the quadriceps tendon, should share in this mal-development; but the character of the labor itself ought to have but little influence, as the cartilage of the patella appeared in the third month of fœtal life.

DR. R. H. SAYRE related the history of a similar case, and exhibited photographs showing the condition immediately after birth, and again six months later. The labor and the quantity of liquor amnii had been normal, and no cause could be assigned for the condition. At the present time, the leg could be flexed on the thigh to about 45°, and extension was possible only to a straight line. The shortening was ¾ of an inch. No patella had yet been found.

DR. KETCH said that in a collection of fifty-six cases of congenital dislocation, reported by Dr. Hubbard and himself, there was only one congenital dislocation of the knee, and this was unilateral. The literature of the subject was still very meagre, Noble Smith being the only author he had found, who spoke of the condition at length.

The treatment which this author advocated, had yielded uniformly good results.

Dr. Le Roy W. Hubbard, by invitation, presented the report of

A CASE OF POTT'S PARAPLEGIA.

The case was treated by suspension, after the method suggested by Motchoukowski. It was one of those untractable ones that had resisted ordinary methods of treatment. Drs. Ketch and Hubbard employed daily suspension for a few minutes, and a decided daily improvement was noticed within a month, but a complete cure had not been established up to the time of the report.

Dr. Putzel said that his pathological studies had led him to believe that the majority of cases of Pott's paraplegia were not due to pressure, but to a transverse myelitis; and his experience with the treatment by suspension had taught him to consider it a method which was, at best, only a temporary relief. Very rapid improvement often followed many methods of treatment. Large doses of iodide of potassium had not yielded him very satisfactory results. It was important to remember that the disease showed a strong tendency to spontaneous recovery.

Dr. Birdsall thought that where Pott's paraplegia was due to myelitis, the disease was fatal; but many cases were due, not to a myelitis, but to irritation and pressure on the anterior or posterior roots of the nerves in their passage through the foramina. Among the various theories which had been advanced concerning the action of suspension, he thought that the most plausible one attributed the beneficial action to a slight separation of the vertebræ, with consequent improvement in the circulation of the affected parts, particularly the nerve roots. This was what might be expected from our knowledge of nerve-stretching; and on this account, he thought the method somewhat dangerous. For many months after Charcot called attention to the method, the literature of the subject was very extensive, but more recently, it had become quite scanty. It was particularly strange that these early investigators had not furnished any later reports.

Dr. L. C. Gray said that, excluding those cases which were complicated by organic lesions of the cord, he thought that the etiology of Pott's paraplegia could be explained by reflex causes. Nerve-stretching in this disease was a very different thing from what it was in locomotor ataxia. The latter disease had a very complicated pathology, and embraced several distinct varieties. It was a very significant fact, that the results claimed by Charcot had not been obtained by other observers. He did not think that the treatment by suspension, when properly managed, was dangerous; and where the paraplegia was of reflex origin, he would look for temporary relief, and in milder cases, even a cure was not impossible.

Dr. W. R. Townsend reported two cases which he had treated by extension in bed, according to the method recommended by Wm. J. Fleming in *The Lancet* for 1889. He had modified the arrangement for extension, by using a jacket around the pelvis, with straps passing down on each side. Both cases had received large doses of iodide of potassium in addition to extension; and both showed the improvement noted in Dr. Hubbard's case.

Dr. Ridlon stated that he had made use of large doses of iodide of potassium, the actual cautery, and of horizontal traction while in bed; but he had been unable to see any favorable modification of the disease by any of these methods. He now kept his patients on their backs, and waited for them to get well. One case recovered perfectly after three years.

Dr. Ketch said that he had suggested the use of suspension in the case reported by Dr. Hubbard, after the paralysis had lasted for about three years, and had not been improved by recumbency, or the use of iodide of potassium.

Dr. R. H. Sayre said that the treatment of Pott's paraplegia by suspension had been practiced as long ago as 1828, by J. K. Mitchell, of Philadelphia. Suspension failed to give relief when carried to excess, and it was dangerous if injudiciously applied. These cases should not be left untreated, for their chances of becoming permanently paralyzed were thereby increased. Constant traction by means of the "jury mast," and traction with recumbency, were both very useful methods. By making use of extension with the patient in the "wire cuirass," his father had been able to employ traction with recumbency without depriving the patient of the benefits of fresh air.

Dr. Phelps considered that the employment of suspension at a period when the disease was still active, was bad practice; and the great majority of cases recovered, if the spinal column were only fixed.

Dr. Hubbard did not think that pressure on the nerve roots could be of common occurrence; for sensory symptoms rarely appeared, and then only in the later stages.

Dr. A. B. Judson read a paper entitled

A CRITICISM OF WILLETT'S OPERATION FOR TALIPES CALCANEUS.

He stated that in this affection, the deformity was of less importance than the disability, which prevented the patient from resting on the toe in walking—a disability which Mr. Willett sought to remove by shortening the tendo Achillis. The writer demonstrated that the tension on the heel-cord greatly exceeded the weight of the body; and expressed the opinion that the tendon, shortened by operation, would not long endure the strain without yielding. He advocated the mechanical

treatment of this disability, and presented a brace, which was easy to apply, convenient to wear, and inexpensive.

DR. W. E. WIRT, by invitation, gave a mathematical demonstration, showing that Dr. Judson, in his calculations, did not make any allowance for the action of the other muscles; and that when these were considered, it was found that the tension sustained by the tendo Achillis was at no time more than 1.4 times the weight of the body.

DR. ROYAL WHITMAN, by invitation, read a paper on the *Rational Treatment of Flat Foot*, and showed some plaster casts of cases he had treated.

DR. WILLY MEYER presented *Two Cases of Flat Foot*, which he had treated by supramalleolar osteotomy, and showed photographs and casts illustrating the condition of the patients, before and after the operation. He considered the method a most rational one; for it required the patient to step upon the outer border of the foot, so that the weight of the body was transmitted through the cuboid, instead of through the scaphoid bone. Dr. Whitman's results were excellent; but they had been obtained in comparatively young subjects, after six months of treatment. The method which he advocated, would secure permanently good results in as many weeks.

DR. R. H. SAYRE remarked that Mr. Golding-Bird, who was the first to do these operations, found less frequent occasion than formerly to resort to this method, as he was able by non-operative measures to relieve pain and, in great measure, to remove the disability.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Report concerning the Cases of Poisoning in India—An Interesting Case of Suppurating Dermoid of the Right Ovary—Diuretin—Miscellaneous.

Dr. T. D. Collis Barry has furnished an interesting report concerning the cases of poisoning in India, of which it is to be regretted there are many. In fact, one of the railway companies in India recently published a notice warning unsuspecting travelers against wretches who go about robbing those to whom they have administered some narcotic. Dr. Barry, however, has dealt with the more serious aspect of poisoning; that is to say, cases in which it is suspected poison has been administered with a view to murder. Of these there were 170 last year, as compared with 182 the year before, and 159 in 1887. Poison was discovered in sixty-six cases, a smaller percentage than usual, of which thirty-three were arsenic, twenty opium, five powdered glass, three datura, three mercury, and two nux vomica. Some curious cases which were inquired into are mentioned, amongst others a blacksmith at Salara, attached to the Ninth Regiment, stated that some poison (corrosive sublimate) had been mixed with his food by his assistant, the assistant wishing to remove his senior with a view to promotion. After careful inquiry, it was proved that the poison had been added to the food by the blacksmith himself, with a view to accusing the assistant. Pounded glass has been for some years tried, but it appears to have met with little success, as its coarseness and grittiness have betrayed its presence to the intended victim. Only one case is recorded in which powdered glass was successful in taking life, and death occurred in forty-eight hours. Dr. Barry says that arsenic has always been the poisoner's favorite material, opium enjoying the next place, the figures being last year 50 per cent. and 31 per cent. respectively, and this has been the average during the past ten years. A very favorite way of administering arsenic is in the form of sweetmeats. In one case a sweetmeat was analyzed weighing 860 grs., and from it was obtained no less than 610 grs. of arsenic. This interesting trifle was given to a police Sepoy by a man with whose wife the Sepoy had run away. A singular case is on record of five patients in a leper hospital who were found to be suffering from the effects of poison, and on investigation it was discovered that some tamarinds they had eaten contained 12 grs. of arsenic to the lb., while some sweetmeats they had also consumed showed the presence of the poison to the extent of 12 grs. to the oz. The would-be murderer, in this instance, was a leper who wished to dispose of another leper in order that he might marry the latter's wife, and as he was unable to get the man by himself, he coolly decided to poison the lot.

Dr. William Duncan has had under his care, at the Middlesex Hospital, an interesting case of suppurating dermoid of the right ovary, which had opened into the bladder. It was diagnosed as being a suppurating pelvic cellulitis, and Dr. Duncan cut down upon the abdominal swelling, with a view of making a large counter-opening into the abscess. This is his invariable custom when a pelvic abscess has opened into the bladder, as otherwise, owing to imperfect drainage, the case drags on indefinitely, and cystitis aggravates the sufferer's condition; whereas, when a free exit is made for the pus elsewhere, the vesical opening soon closes. In this case, instead of opening the sac of an abscess, Dr. Duncan cut into the peritoneal cavity, and found that the case was one of dermoid tumor of the right ovary. Upon passing the hand into the pelvic cavity, the growth proved to be so densely adherent to the uterus, bladder, and pelvic walls, that he decided it would be unjustifiable to attempt its removal, so the tumor was stitched to the edges of the incision in the abdominal wall, and ten days later

an opening was made into it. The patient quickly put on flesh, and soon only slight traces of pus were to be found in the urine. Later, some bagging of pus taking place in the most dependant part of the sac, the patient was placed under an anæsthetic, with a view of making a counter-opening into the vagina. The sound, however, in the bladder passed over to the right side of the pelvis, making it appear that it would be necessary to cut through this viscus in getting to the abscess. The attempt was consequently given up. The woman rapidly becoming worse through the pyrexia and rigors, it was determined, at all costs, to get an opening into the vagina. This was fortunately effected without wounding the bladder, and from that date the patient made an uninterrupted and rapid recovery. The case showed the important fact that an ovarian tumor may disappear if free drainage be made through it.

Diuretin is the name of a new preparation which has lately been introduced into clinical practice. Caffeine, both *per se* and in saline combination, has for some time past achieved a certain reputation as a diuretic, but nevertheless its action is not always a very reliable one. Theobromine, on the other hand, besides being until recently far more costly than caffeine, is practically almost insoluble in water, although it acts more powerfully upon the kidneys than the former alkaloid. Diuretin purports to be a species of double salt; in fact, a salicylate of theobromine and sodium, and is so readily soluble that it dissolves in half its own weight of water, and retains this large proportion even after cooling. The adult dose recommended is about 15 grs., but this quantity may be repeated five or six times in the course of the twenty-four hours.

It is stated that a medical man claims to have discovered a method of rendering tobacco harmless to the mouth, heart and nerves without detriment to its aroma. A piece of cotton wool, steeped in a solution of 5 to 10 per cent. of pyrogallic acid, inserted in the pipe or cigar holder, will neutralize any possible ill effects of nicotine. In this way not only may the generally admitted evils of smoking be prevented, but cirrhosis of the liver, headache, and furring of the tongue may be avoided. Citric acid, which was recommended by Vigier for the same purpose, has the serious disadvantage of spoiling the taste of the tobacco.

On July 4, an interesting ceremony took place at Marlborough House, when the Princess of Wales presented certificates of membership of the National Pension Fund for Nurses to representatives of the first thousand who joined the fund. The number of nurses present was about 700, and they were arranged in companies under the trees in the gardens behind Marlborough House. All the principal London, and many of the Provincial hospitals were represented, while here and there were to be seen the special uniforms worn on foreign service. The royal party appeared on the steps leading from the conservatory shortly before 1 P.M., and as each nurse passed the steps she received her certificate from the hands of the Princess. Each certificate had been signed by the Princess of Wales, and stated that it was presented in testimony of the fact that the recipient was one of the first thousand nurses who joined the fund, and thus became one of the founders who secured £25,000 as the nucleus of a permanent fund for the benefit of the nurses of the British Empire. G. O. M.

NEW INSTRUMENTS.

A NEW DILATOR FOR THE TREATMENT OF OBSTRUCTIVE DYSMENORRHŒA.

Read in the Obstetric Section of the Tenth International Congress, at Berlin, August, 1890.

BY THOMAS MORE MADDEN, M.D., F.R.C.S.Ed.

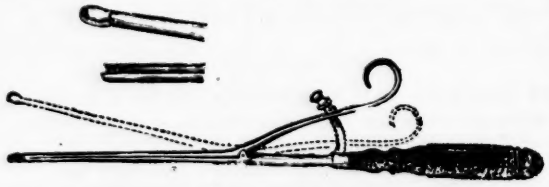
Physician to the Hospital for Sick Children, Dublin; Obstetric Physician and Gynecologist Mater Misericordiæ Hospital; Examiner Conjoint Board Royal College of Surgeons and Apothecaries' Hall, Ireland; Consultant National Lying-in Hospital; ex-President Obstetric Sections of the Royal Academy of Medicine, Ireland, and of the British Medical Association; formerly Vice-President British Gynecological Society; M.D. *Honoris Causa* Texas Medical College, Etc.

The following is an abstract:

In the recognition of obstruction from cervical stenosis as the chief cause of dysmenorrhœa, will be found the key to the pathology and successful treatment of this condition in the great majority of cases. Thus in my hospital practice during the past 20 years, nearly 11 per cent. of sterility similarly caused have come under observation in a total of nine thousand gynecological cases. Of all the ailments of female existence, few give rise to more persistent suffering, or produce more disastrous effects on the general health, and even on the cerebro-nervous system, or on the moral constitution of the patient, than does well-marked obstructive dysmenorrhœa. The latter consequence is more especially evident, in many cases of alcoholism, which in women may very frequently be dated from their first painful menstrual period, for the relief of which stimulants are too often improperly administered and repeated in increasing doses, until finally, in many cases, the victim of dysmenorrhœal alcoholism becomes a habitual, and, perhaps, an incurable drunkard.

It is not my purpose here to refer to the successive improvements which have since been effected in the methods of carrying out the gradual dilatation of the cervical canal, since the introduction into practice by Simpson and Sloan of sponge tents or laminaria bougies for this purpose. No greater improvement has occurred in

our branch of surgery than the replacement of these oftentimes unsatisfactory, possibly hazardous, or even fatal, and always painful procedures by the more effective means now at our disposal for the rapid expansion of this canal. Of these, perhaps the best known and most generally employed are either Hegar's, Duke's, or Lawson Tait's dilators. I now desire to call attention to another instrument which I have designed for the same purpose, and which, I venture to hope, may be found to supply a want still recognized by the gynecologists—namely, that of a reliable and effective means of securing the rapid and permanent dilatation of the cervical canal in the treatment of stenosis giving rise to the morbid conditions now under consideration. This instrument differs from other dilators in several respects, and, above all, in one which I consider



most important—viz.: in producing expansion of the canal from within outwards—in other words, in imitating the natural process of expansion from the uterine cavity downwards to the os uteri; whereas most other dilators, such as Hegar's, etc., act in the opposite direction. In my own hands the utility of this instrument, the expansion effected by which may be measured by the affixed index, has been fully tested in a very large number of cases of sterility and dysmenorrhœa in hospital and private practice. I may add that my dilator, which does not occupy more room than the ordinary sound when introduced, may also be used with advantage for the dilatation of the female urethra in many cases in which this procedure is indicated. This instrument has been carefully made in accordance with my directions by Messrs. Arnold & Sons, West Smithfield, London.

MISCELLANY.

ANTIVIVISECTION BITTERNESS.—The Society for the Protection of Animals from Vivisection recently held its annual Spring conference in London. The war-cry this year was "Pasteurism and Crime," and Canon Wilberforce is reported to have rejoiced in the fact that the movement to found a Pasteur Institute in England had been defeated by the society's method of placarding the city with large posters, containing the list of those who had died after treatment by the Pasteurian system. Many others indulged in bitter denunciation of both vivisection and Pasteurism, as being the means of brutalizing the otherwise honorable and useful profession of medicine.

LETTERS RECEIVED.

Dr. J. M. Batten, Pittsburgh, Pa.; Dr. G. O. Mead, Newmarket, Eng.; Dr. C. W. Hitchcock, Detroit, Mich.; W. T. Keener, Dr. J. C. Hoag, Chicago; Copeland Townsend, W. H. Schieffelin & Co., Dr. S. T. McDermith, Thos. Leeming & Co., I. Haldenstein, Dr. R. B. James, F. M. Lupton, J. H. Bates, Dr. J. A. Cutter, Dr. S. T. Armstrong, Dr. W. R. Townsend, E. Steiger & Co., New York; The Upjohn Pill & Granule Co., Kalamazoo, Mich.; Battle & Co., Provident Chemical Works, St. Louis, Mo.; John Parmenter, Buffalo, N. Y.; Dr. W. H. Davies, Maquoketa, Ia.; Dr. L. G. North, Tecumseh, Mich.; Dr. E. Chenery, Dr. F. S. Parsons, Arena Pub. Co., National Typewriter Co., Boston, Mass.; Dr. S. C. Newlin, New Salem, Ind.; Dr. L. B. Grandy, Oxford, N. C.; Dr. D. B. Collins, Madison, Wis.; Dr E. L. Jones, Florence, Ala.; Cincinnati Sanitarium, College Hill, O.; Dr. M. M. Lively, Hardyville, Ky.; Dr. H. M. Mixer, New Hampton, Ia.; Dr. F. Humbert, Alton, Ill.; Dr. H. H. Witherstine, Rochester, Minn.; Dr. W. Wyman, Washington, Dr. H. Judd, Galesburg, Ill.; Thos. F. Goode, Buffalo Lithia Springs, Va.; Dr. J. G. Carpenter, Stanford, Ky.; Dr. T. B. Greenley, West Point, Ky.; Allen & Yates, Buffalo, N. Y.; Sharp & Dohme, Baltimore, Md.; Dr. A. H. Hay, Racine, Wis.; Dr. D. Barrow, Lexington, Ky.; I. D. Holden, Stockton, Cal.; Dr. T. Legaré, Charleston, S. C.; P. Blakiston, Son & Co., Philadelphia.; Dr. H. A. Clarke, Rockford, Ill.; Dr. E. S. Elder, Dr. L. H. Dunning, Indianapolis, Ind.; Dr. W. A. Dietrich, Lookout Mt., Tenn., Dr. Millard G. Peck, Dr. J. A. Robison, Chicago; Dr. H. B. Baker, Lansing, Mich.; Dr. E. A. Curry, Danville, Pa.; Dr. A. B. Patterson, Atlanta, Ga.; Dr. J. D. Scouller, Pontiac, Ill.; Dr. C. Montezuma, W. Shoshone, Nev.; Dr. N. E. Landon, Newark, N, Y.; Johnson & Johnson, New Brunswick, N. J.; Dr. A. L. Hummel, M. J. Lawson, Philadelphia; Hôpital Saint-Louis, Paris, France; Dr. J. L. McComas, Oakland, Md.; Dr. A. S. Kinnamann, West Salem, O.; Dr. J. H. Van Eman, Kansas City, Mo.; Dr. Tosubour, Beatrice, Neb.; College of Physicians and Surgeons, Keokuk, Ia.; Dr. J. A. Crook, Jackson, Tenn.; Dr. J. H. Baxter, Washington; Dr. D. M. Wick, New Hartford, Ia.; Dr. J. A. Brobst, Macungie, Pa.; Dr. B. C. Anderson, Beardstown, Ill.; Dr. S. O. L. Potter, San Francisco, Cal.; Dr. J. S. Marshall, Cleveland, O.; Dr. W. C. Owen, Coquille City, Ore.; Dr. W. H. Myers, Longwood, Ill.; McIntosh Battery & Optical Co., Chicago; Dr. J. G. Hanks, Rays Hill, Pa.; Dr. R. S. Davis, Pittsburgh, Pa., Dr. D. B. Collins, Madison, Wis.; Dr. J. B. Mattison, Brooklyn, N. Y.; Dr. H. C. Jones, Decatur, Ill.; Dr. G. R. Wells, Livingston, Mont.; Dr. T. D. Crothers, Hartford, Conn.; Dr. Q. C. Smith, Austin, Tex.; Dr. C. E. Denison, Philadelphia; Dr. J. W. Stickler, Spring Lake, N. J.; Dr. T. H. Huzza, Atlanta, Ga.; Dr. J. W. Shively, Washington; Dr. L. D. Mason, Greenwich, Conn.; Dr. W. M. Knapp, Asylum, Neb.; Dr. U. O. B. Wingate, Milwaukee, Wis.; Dr. D. R. Walker, Reeses Mills, Ind.; Dr. J. G. Meachem, Racine, Wis.; Dr. W. W. Hester, Chicago, Ill.; Dr. J. F. Blair, Linwood, O.; Dr. R. P. Crump, Nitta Yuma, Miss.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending August 9, 1890.

Medical Director P. S. Wales, ordered in charge of the Museum of Hygiene, Washington, D. C.

Surgeon George A. Bright, ordered to the U. S. S. "Constellation."

Surgeon B. S. Mackin, detached from the U. S. S. "Constellation," and to Naval Hospital, Philadelphia, for medical treatment.

Surgeon E. Z. Derr, ordered to the U. S. S. "Minnesota."

Surgeon J. R. Waggener, detached from the U. S. S. "Minnesota," and ordered to the U. S. S. "Kearsarge."

Surgeon A. M. Moore, detached from the U. S. S. "Kearsarge," and granted three months' sick leave."